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ABSTRACT

In this report, the author reviews the actual and potential use of competence and performance based teacher education (C/PBTE) in regard to further education in England. He describes the concept of further education, reviews existing practices, and makes a number of suggestions for future action. The author first outlines the development and use of this individualized modular system in the United States and then analyzes the arguments for and against such a behaviorist approach to teacher skills. He claims that while much work is needed in adapting this system to the English system, experience elsewhere indicates the C/PBTE removes "some of the mystique and institutional restrictions which surround teacher education." The author notes that the development of these modules in the United States required an investment of $2 million and says that not all of the 100 modules available are relevant to the United Kingdom. He suggests, however, that various bodies, including the further education establishment, could valuably support developmental work based on the modular approach. (Two appendixes to the report describe the tentative approaches that have been made in the United Kingdom in this field, while other appendixes describe modules that are available and how they are used.) (KC)

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Further Education Curriculum Review and Development Unit

A Staff Development Publication

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Competency in teaching

A review of competency and performance based staff development

Eric N Tuxworth
Huddersfield Polytechnic

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FURTHER EDUCATION CURRICULUM REVIEW AND DEVELOPMENT UNIT

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Dear Sir/Madam

COMPETENCY IN TEACHING

Attached is a report as above, by Eric Tuxworth of Huddersfield Polytechnic, reviewing the actual and potential use of competence and performance based teacher education. He describes the concept, reviews existing practice and makes a number of suggestions for future action.

For the purpose of the review, Competence Based Teacher Education (CBTE) and Performance Based Teacher Education (PBTE) are assumed to be synonymous and the composite abbreviation C/PBTE is used throughout the text.

He outlines the development and use of this individualised modular system in the United States and elsewhere. Two appendices describe the tentative approaches that have been made in the UK in this field. Other appendices describe modules that are available and how they are used.

The author analyses the arguments for and against such a behaviourist approach to teacher skills, an approach that may well alarm as many teacher-educators as it enthuses. He claims that whilst there is much work to do in adapting this system to the UK situation, overseas experience indicates the C/PBTE removes "some of the mystique and institutional restrictions which surround teacher education".

The main aim of the FEU in publishing this review is to promote an increased awareness of the concept and to generate informed discussion. Whether for initial training or for in-service staff development C/PBTE, sensitively used, has some potential in assisting teachers, whether in schools or FE, to develop or refurbish their skills. Eric Tuxworth reminds us that the development of these modules in the US, required an investment of two million dollars, and that not all of the 100 modules available are relevant to the UK situation. He suggests however that various bodies, including the FEU could valuably support developmental work based on the modular approach he describes, especially "in the light of the rapid changes taking place in FE, Industrial Training and in the post-16 schools sector".

It is hoped that all those concerned with the analysis and development of teaching skills will find this review interesting and challenging. Those wishing to do more work in this area are invited to contact the FEU.

Yours faithfully

Jack Mansell

JACK MANSELL
Director

Board of Management

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1. reviewing the range of existing curricula and identifying overlap, duplication and deficiencies
2. determining priorities for action to improve the total provision and suggesting ways in which improvement can be effected
3. carrying out specific studies, helping with curricular experiments, and contributing to the evaluation of objectives, and
4. disseminating information about the process of curriculum development in FE.

The publications in this series of Reports are intended to inform teachers and others and to stimulate professional discussion about matters of concern to the FE service.

The views expressed are those of the authors and are not necessarily those of the Unit's Board of Management. A limited number of extra copies of this report are available from

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The help of staff developers who cooperated in the small scale survey is acknowledged and I am privileged to be able to include extracts from the reports of other workers in the field in Australia, USA and the UK. Their names are included in the text but I would like to record my appreciation of their willing help.

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Preface

(i) This relatively brief report was commissioned by the FEU with the purpose of providing information about one, well-defined, approach to teacher training and staff development, which has systematically been developed, at considerable cost, in the United States of America, with the aid of federal funds, for the support of vocational education.

(ii) Competency based education, whether for young people in schools and colleges or for the training of teachers, hinges on the clear specification of performance objectives and criteria, focuses on the achievement of competence and professes some assurance of standards. It is claimed to be an advantage on traditional approaches and seems to be attracting growing support from programme administrators and curriculum developers in some states of the USA. Applications of the concept are being extended from initial teacher training to staff development, to training in industry and to administrator training.

(iii) Faced with unprecedented demands for curriculum change and staff development, some in the FE service in this country may well be glad to adopt ideas and materials which have been found useful elsewhere and which have, in a limited way, been tried in the UK context. This is not to suppose that the wholesale importation of any educational innovation is likely to provide quick solutions to pressing needs. It may however be the case that those responsible for arranging and providing staff development at all levels will see some utility in, at least, some elements of performance and competency based teacher education.

(iv) The transfer of ideas, adoption of evaluated elements and the eclectic adaptation of curriculum materials to suit local contexts, is part of the art of curriculum development. It is in this spirit that this review is offered rather than as an attempt to create an international ideology of teacher education.

(v) One point worthy of note in this preface is that performance/competency based vocational teacher education has been instrumental in the USA in making the knowledge, methodology and resources for teacher education much more accessible to teachers in the field setting. The technology has to a great extent been separate from lengthy award bearing courses of an institutionalised nature. In this respect, a much greater measure of relevance and flexibility in the provision of staff development seems to have been made possible.

(vi) The reader, even at this stage, may already be thinking "well – yes, this is all very well, but what is performance based and what is competency based teacher education? Are they the same and, if not, how do they differ?" One of the purposes of this report is to try to answer these questions but at this stage it may suffice to accept PBTE and CBTE as meaning essentially the same approach, since for all practical purposes the two terms are synonymous. They refer, and this is a brief description only, to teacher training and staff development based on what teachers actually do or need to be able to do in their professional role. Competence and performance are the criteria for success rather than mainly written expressions of knowledge of theory and its applications. Theory supports practice rather than the other way round.

(vii) The jargon and rhetoric associated with C/PBTE is highly developed in the USA and is likely to be distinctly off-putting to the average British reader. However the basic concepts of C/PBTE are relatively simple and straightforward. They state a clear position, unashamedly owing their origins to a predominantly behaviourist approach to learning and, consequently, have relatively sharply defined characteristics when compared to conventional courses.

(viii) Description and discussion of C/PBTE and its applications should not be taken as advocacy of an exclusive and monolithic system. It is possible to recognise the potential of this rational and systematic approach and, at the same time, acknowledge its limitations and the existence of some critics and sceptics.

Apart from any reservations about the concept of C/PBTE there are risks inherent in its misapplication, particularly when modules and systems are taken to be a substitute for human interaction. There is also much to be found out about

C/PBTE through evaluation and research. Even committed advocates such as the PBTE programme developers at the National Center for Research in Vocational Education in the USA make their position clear.

> "We also firmly believe that while PBTE holds much promise as a reform movement to improve teacher education it is *one* promising approach, and not the only one. Before PBTE can be recommended as the best approach for any given situation much additional research, development and program evaluation is necessary". (Norton, Harrington *et al*, 1978 – p.6).

Chapter 1 Background and Context

1. Although the basic need for initial professional training for further education teachers is now well recognised and will be met at an improved rate by courses set up following the ACSTT report (1976), the call for increased and improved staff development continues to grow.

The further education service is having to cope with change on a scale and at a rate which makes staff development and in-service training a key element in institutional and individual response to the new demands. Recent reports from DES (1979) and FEU (1981a) have drawn attention to the role of professional training and staff development in relation to vocational preparation of various kinds. At the same time the impact of the New Training Initiative (DOE 1981) will inevitably increase the need for in-service training to help staff to take an effective part in the reorientation of mainstream further education and in continuing education for adults.

2. The Advisory Council on the Supply and Education of Teachers (ACSET, 1982), in giving advice to the Secretary of State for Education, notes the urgent changes being pressed upon the FE service as a consequence of the NTI White Paper (DOE 1981) and related activities. The scale and rate of change is such that FE teacher training in all its phases must be affected and new ways of meeting the evident demand must be found.

The "New FE" described by Melling (1981) will render many of the existing practices in curriculum design, teaching, learning and resource management obsolescent if not obsolete. The implication of this "New FE" scenario is that further education is still a growth area but that existing staff will be asked to do different things but with the utmost economy in the use of resources.

3. Teacher training support for FE courses of a more specifically vocational kind needs to be continued and developed. Craft, technician and business studies courses are being affected both by the "New FE" and by moves to improve access to FE and training for adults; for example open learning and the "Open Tech." (MSC 1981). Transition from the multiplicity of courses available for young people to "mainstream" FE needs to be resolved in a rational and equitable way (FEU, 1981c).

4. The FEU (1981a) has recognised that initial teacher training has a role to play in the long term preparation of staff to work in the "New FE". However there are, inevitably, limitations on the contribution which conventional award bearing courses can make towards meeting needs in relation to rapid change and innovation. The very nature of the schemes now being evolved in FE requires that staff development should be closely related to needs as they emerge. This, in operational terms, means field based curriculum related staff development which results in the devising of new schemes, plans and resources, in improved processes of teaching and in the management of learning.

5. Apart from new training needs arising from innovation, there have been the rumblings of discontent with the traditional form and content of initial teacher training both in the USA and in the UK for the past two decades or more. The James Report (DES, 1972) and the White Paper (HMSO 1972) drew attention to the need to strengthen the co-ordination between initial training and teaching practice; to give continued support to new teachers in their schools and colleges during their early years in teaching and to make theoretical studies more related to practice.

In the USA the critics of conventional teacher education were even more outspoken and devastating than the gentler reviewers in the UK. A number of studies in the 1960's showed considerable dissatisfaction with the professional training of teachers in the USA. These studies included those of Conant (1963); Koerner (1963) and a large scale study by the National Education Association (1967).

6. The competency and performance based movement in teacher training arose in the USA, mainly as a way of providing an effective response to the criticisms of institutionalised, theory based courses. It also sought to offer a greater measure of public accountability for the cost of teacher education, to bring about a greater measure of participation by the schools and colleges which employed teachers and to make the whole process more relevant to what teachers actually do.

Since these early concerns C/PBTE has perhaps passed its peak as an approach to general school teacher training. In vocational education however the C/PBTE movement in the USA has grown steadily. If anything it has become more significant through the increasing emphasis on competency based learning for

students on vocational programmes in schools and colleges.

7. The development of C/PBTE in vocational education has been backed by the federally funded efforts of the National Center for Research in Vocational Education at the Ohio State University in Columbus, Ohio. By any standards the work of the National Center is impressive. Since 1970 a series of modules (NCRVE, 1977) for the main role of the vocational teacher has been developed, field tested and widely distributed through a publishing agency. It is these basic modules, now available in the UK* which will give the British educator the first impression of what vocational educators are trying to do with C/PBTE in the American context. However it needs to be stressed that this one modular interpretation, although powerful in its effect, is not all there is to the competency based approach. For this reason the description of C/PBTE will be approached at three levels: first a discussion of concepts and characteristics; secondly the systems for providing C/PBTE; and thirdly a review of modules or other support materials for systems, or for adaptation to different contexts.

8. Earlier developments in the USA were concerned with modules for training in basic competencies. It is worthy of note that subsequent development has been addressed to extending the application of C/PBTE to new and emerging needs, such as teaching "special needs" students; careers guidance; and the installation of competency based education in vocational programmes. Other recent work has been directed towards producing modules for vocational education administrators, i.e. the equivalent of course leaders, heads of department, staff development officers and curriculum development workers.

It is perhaps significant that work on C/PBTE, after receiving in excess of two million dollars of federal funding for the basic range of modules** (NCRVE, 1977) and their dissemination, continued to receive federal grants for the extension of the work. This extension work is both in the detail of coverage and, in breadth, in terms of the personnel forming the target population.

In providing this federal support for C/PBTE development in vocational education the US Office of Education gets no firm guarantee of implementation. The concepts, systems and materials have to succeed on their own merits and be accepted, adapted and institutionalised by state departments and individual schools and colleges, taking account of local evaluation of their utility.

9. Legal responsibility for providing education rests with the individual states. Although the federal government votes funds for research, development and special initiatives, the states determine the shape and character of the system and have some influence on the curriculum. Given the extent of state, local and institutional autonomy, the "take up" of C/PBTE in vocational education has naturally been uneven. Some states (e.g. Georgia, 1981) have effectively standardised on competency based education. Pennsylvania, through its major institutions is developing a range of operational C/PBTE systems (Harrington, 1982). Other states appear to be less concerned to press for the adoption of any particular system.

The sales and distribution figures of modules in the USA are, however, impressive as an indicator of success (Adams and Patton, 1981), particularly in regard to the range of agencies using the materials. Worldwide sales have been less extensive but still reflect an unsatisfied need for modular materials of this kind. Whether or not they fit the local context exactly, they may well be the best that are currently available.

10. It is not possible to point to home based research and development work on modular support materials for teachers which matches up to the scope and cost of C/PBTE work in vocational education in the USA. However, there have been some modest attempts to provide in-service training materials of a packaged type, which will be reviewed in Chapter 4. These approaches are not all by definition performance or competency based, but at least have shown that in-service teacher education can be assisted by the availability of high quality support materials. The work of the Council for Educational Technology, the Open University and others in this area, is noted in this connection in Chapter 4.

11. Increased interest in "distance learning" and "open learning" techniques has been aroused by a number of

*Stam Press, Cheltenham.
**The list of 100 basic PBTE modules is shown as Appendix 1 in this publication. Recently available new modules are listed in Appendix 6. An extract from a module on "Simulations" is given as Appendix 7.

recent publications. If vocational students at technician and other levels can learn in this way there would seem to be no logical barriers to teachers learning and developing their professional role in the same way, at least for some elements of that role. Such a system of distance learning has been produced in Australia, developed from the basic ideas of the American C/PBTE materials but applied to meet the needs of a geographically dispersed population of teachers in New South Wales (see Appendix 4). Some caution however must be exercised in the use of modular materials in the distance learning mode. The need for group support and personal interaction with tutors has shown through clearly in the few evaluative studies reviewed in the appendices to this report.

Chapter 2 Concepts and Theories

12. Competency and performance based teacher education (C/PBTE) rests on a number of assumptions which may not be exclusive to this approach and which may be untestable in some cases. The main assumptions are that:

(i) the teacher is a significant agent in causing learning and intellectual development in the learner;
(ii) what the teacher does in his/her transactions with the student makes a difference to the rate and quality of the learning;
(iii) the role of the teacher can be described in terms of specific acts, functions or competencies which are observable and which can be learned by the student teacher or in-service teacher;
(iv) the professional training of teachers can, and should be based on competencies derived from a study of teachers' roles;
(v) assessment or appraisal, whether by self or others, of professional development should be based on the actual performance of specified competencies, in the field setting as far as possible.

13. A competency can simply be defined as *the knowledge, skills and attitudes required to perform a given task or act.* It is therefore a component of the role of the teacher which can separately be identified for purposes of teacher training. Lists of such competencies are sometimes referred to as "performance elements" and are used as the basis of design for modular C/PBTE programmes. There are however alternative, more complex definitions of competency which are noted in Chapter 4.

14. In some of the early interpretations of the movement towards a more effective mode of teacher preparation, the identification and statement of competencies was sometimes given pride of place. This gave rise to the preference for the term CBTE. In other cases performance was seen to be the main identifying and controlling characteristic and PBTE was thus preferred.

Perhaps the definitive discussion of the terms was provided by the American Association of Colleges of Teacher Education (AACTE, 1976) when they concluded that there was no real case for separating CBTE and PBTE and that the observed characteristics of programmes then in action showed them to be virtually synonymous. However the two terms are still separately used in different publications and cause some confusion to the newcomer. C/PBTE is therefore used as an inclusive term in this publication.

15. The concept of C/PBTE is not tied to any particular delivery system or set of materials such as modules, though support materials in this form are used in many of its applications. However, C/PBTE has strongly been identified in this country with the one set of modules readily available (NCRVE, 1977)*. The essential characteristics of C/PBTE were proposed in 1971 but were reissued with some modifications by AACTE in 1974. Desirable and related characteristics were also stated in an attempt to give some clarity to a movement which, like all educational innovations, was at risk of being assimilated to existing practice; with consequent loss of its identity, purposes and potential as a force for change. (Spady, 1977).

16. The characteristics stated by AACTE in 1974 have been so often repeated in the USA literature that they merit restatement here in the adapted form used by Hamilton (1981) to reflect more recent interpretations.

Essential Characteristics of C/PBTE

1. Competencies needed by teachers are carefully identified, stated in behavioural terms and shared with teachers in advance.
2. Criteria for measuring competency in teaching tasks, conditions for assessment, and expected level of mastery are stated and shared with teachers in advance.
3. Instructional programmes focus upon the development and evaluation of the stated competencies needed by teachers.
4. Assessment of the teacher's competency uses performance of teaching tasks as the primary evidence, though knowledge can be taken into account.
5. Progress through the programme is determined by the demonstration of competency in teaching tasks rather than by time or course completion.

*See Appendix 1.

Desirable Characteristics

1. Instruction* is individualised and personalised.
2. The learning experience is guided by feedback.
3. The programme as a whole is systematic.
4. Emphasis is on exit rather than on entry requirements.
5. Instruction is modularised.
6. The teacher is held accountable for performance.

17. Other related characteristics of C/PBTE in the USA, although not regarded as essential to the concept, provide some of the innovative and potentially valuable features of the delivery systems for C/PBTE which will be described in Chapter 3. These include:

(i) field based learning using actual school/college activities;
(ii) regenerative programmes which incorporate formative evaluation and regular review;
(iii) a broad base for decision making between the providers and the clients of training;
(iv) a research orientation in programme design and in evaluation of effects.
(v) the notion of career continuous education for teachers.
(vi) efforts towards role integration in the deployment of competencies.

None of these related features are necessarily exclusive to C/PBTE, though the fundamental changes which are required when a decision is made to turn a programme over to C/PBTE, often enable desirable, associated revisions to be introduced at the same time.

Contrasts and Comparisons

18. The movement which generated support for C/PBTE as a well defined and logically supportable alternative to the much criticised forms of traditional teacher education, had its origins in the late 1960's when the US Office of Education funded exemplary programmes known as the Comprehensive Elementary Teacher Education Models (CETEM). It is considered by some leading exponents in the USA that this was the turning point to C/PBTE (Norton et al. 1978). Out of the CETEM programme came many ideas, systems models and terminology which gradually began to form a coherent C/PBTE movement, extending to all levels of education.

19. The early 1970's produced the relatively sharp definitions of C/PBTE which gave it an immediate appeal to administrators and others who saw it as a remedy for the perceived ills of the education system. On the other hand, it provided a clear target for its academic critics who were soon in full cry as some state authorities sought to force the pace of its adoption by making it mandatory (Lindsey, 1976).

20. Comparisons between conventional teacher training programmes and C/PBTE may be difficult to make because of the apparent lack of uniformity of conventional programmes, which are usually the preserve and property of the providing institutions and their accrediting bodies. On paper they may differ considerably in philosophy, assumptions and approach, though a certain consistency of quality should exist through the moderating effect of the validating procedures. Certainly this is so in the United Kingdom under the aegis of the Council for National Academic Awards.

21. In the USA the ideological struggle in teacher education gave rise to comparisons between C/PBTE and conventional programmes in which the deficiencies of conventional ones were highlighted. In fairness such comparisons are perhaps more useful as propaganda than as a basis for decision making, since C/PBTE is sharply conceptualised as having all the rationality, clarity and functional rectitude that the non-C/PBTE programmes lack. Rather more thorough statements of the rationale for 'traditional' teacher education are made by a number of critics in a collection of essays edited by Smith (1975). These are mainly of an academic, theoretical and philosophical nature rather than being concerned with pragmatic outcomes.

22. Yet it cannot be denied that the teacher education curriculum has been something of a secret garden until relatively recently. The very fact of its control by individual higher education institutions was a source of

*Allowance needs to be made for the different connotation of the term "instruction" in the USA context. It can equate to any provision of learning experience rather than to the, usually, narrower interpretation in the UK as directive, didactic teaching.

some disquiet within the state and local authorities in the USA.

C/PBTE was seen to be one way of breaking the "hegemony of the universities" in regard to teacher training (Gillie, 1974). In some examples of practice, the change to C/PBTE in vocational education has effectively changed the relationships between the main providing institutions and their clients, as will be explained in the descriptions of C/PBTE systems in Chapter 3.

23. Comparisons between C/PBTE and traditional teacher education follow the same pattern as comparisons between competency based education and traditional education for any other group of learners. One such comparison offered by Johnson (1974) follows, and has been quoted in variously modified forms elsewhere.

COMPETENCY BASED EDUCATION	*TRADITIONAL EDUCATION*
1. The main indicator of student achievement is ability to do the job effectively.	1. The main indicators of student achievement are knowledge of the subject and ability to do the job effectively and efficiently.
2. Once a student has demonstrated ability to do the job, his or her preparation is complete. Time is not a factor. Some students finish early, others late.	2. Students operate within specified time limits, such as academic years, semesters, or quarters (or terms). Class hour requirements are generally adherred to.
3. The criterion of success is demonstration of ability to do the job. Mastery criteria are used to determine how well students perform. These criteria must be met for students to be considered competent.	3. The criteria of success are letter grades which indicate the extent to which the student knows the required subject matter.
4. Entrance requirements are not of paramount concern. Students start where they are. If they are not ready, they are helped to become ready.	4. Entrance requirements are important concerns. Students who are not ready cannot be admitted.
5. Flexible scheduling of learning activities is essential to provide for individual differences among students. This allows for year-around educational opportunities and numerous possible times for enrolment.	5. Students are scheduled for instruction into fairly rigid blocks of time. The academic year and infrequent mass registration are standard practices.
6. There are no fixed rules as to how, when, or where learning is to be accomplished.	6. On-campus classroom teaching is the most common approach to instruction. Required lengthy on-campus attendance is standard practice.
7. Opportunities are provided to acquire competencies in practical field or on-the-job experiences.	7. Practical field experiences are limited.
8. Learnings (competencies) are presented in small learning units or modules, combinations of which are designed to help students acquire full competence.	8. Learnings (subject matter) are organized into courses representing academic time units.
9. Provision is made for differences among students in their styles of learning by providing them with various alternate paths for acquiring competence.	9. Lecture-discussion is the most common mode of presentation, supplemented by seminars, laboratory activities, and limited field experiences. Little attention is given to student style of learning.
10. The criterion for a "good" instructor is the extent to which he or she is effective and efficient in helping students acquire the competencies they are seeking.	10. The criterion for a "good" instructor is how much he or she knows about the subject and how well it is presented.

The foregoing practical characteristics of competency based education were presented, according to the author, to clarify the concept because:

> "Practitioners who are becoming acquainted with competency based education are often confused with theoretical explanations. This may be because their interests tend more towards implementation and practice than theory".
>
> (Johnson, 1974, p.355).

24. There is, and has been for a long time, debate about the relative values of the functional approach and the theoretical approach to teacher training. This debate was, however, intensified by the alacrity with which legislators and administrators embraced the concept of C/PBTE and its functional approach. Academics supporting the liberal discipline approach were relatively slow to take C/PBTE seriously, but eventually began to riposte with all the vigour and eloquence that they could command. The objections which they raise are directed at a clear target, since C/PBTE is a sharply defined movement which openly declares its intentions. This contrasts with the relatively ill-defined and amorphous nature of many conventional teacher education programmes. (Smith, 1976).

Objections to Competency Based Education

25. Competency based education in general and competency/performance based teacher education in particular have aroused strong feelings of concern and opposition.

The arguments against C/PBTE have been well rehearsed elsewhere and will only be summarised here. Objectors seem to fall into two categories: those who are fundamentally opposed to any form of behaviourism in education; and those who are prepared to accept and support C/PBTE as an improvement, but who are concerned about the manner of its implementation. Relatively few detailed discussions have appeared in the British journals, but Hugh Field of Garnett College (1979) conducted a review of the literature and considered aims, claims and objections to C/PBTE from a theoretical standpoint. A collection of cautious appraisals from the USA is given in a source book on C/PBTE compiled by Aquino (AACTE, 1976).

26. The most fundamental and recurring objection is that C/PBTE can only meet a limited conception of the teacher's role. Programmes based on defined competencies and objectives are said to be reductionist in effect, breaking teaching into a series of discrete acts when, in reality, the whole of the teaching act is more than the sum of the parts.

It is said that C/PBTE and other forms of behaviourism encourage a dehumanised approach; regarding teacher preparation in the same light as technician training; ignoring the personal development of the student and denying the liberal traditions of teacher education (Broudy, 1975). However, the criticism is made from a philosophical viewpoint once again. The observed effects of programmes are not considered.

27. A further and possibly more supportable charge against C/PBTE is that it has a weak research base. It has not been widely demonstrated that this approach produces improved learning in the students who are taught by teachers prepared through C/PBTE programmes. Despite the lack of evidence of predictive validity, there is an acceptance that C/PBTE has demonstrable content validity and for most participants a higher face validity (Levitov, 1976). It has to be pointed out however that all teacher training, conventional or otherwise, suffers from an inadequate research base regarding causative links between teaching acts and learning outcomes (Rosenshine and Furst, 1971). Reviewing the research base for PBTE Heath and Neilson, (1974) concluded that in the face of other variables such as socio-economic status "the effects of techniques of teaching on achievement (as these variables are defined in PBTE research) are likely to be inherently trivial". (p.475).

28. Criticisms of C/PBTE on theoretical grounds have, understandably, come mainly from teacher educators and, within their ranks, from those mainly concerned with the study of educational theory. However, it is interesting to note that although vocational teacher educators in the USA have often been successful advocates of the movement, a number of constructively critical articles from vocational educators have appeared quite recently. Bell (1980) writing in the Journal of Industrial Teacher Education, enters a number of caveats about competency based education, particularly the dangers from extremist positions; ideological narrowness and the risks of oversimplifying the process of instruction. Moss (1981) in the same journal a year later argues that although competency based education is a good idea, there are limits to where it can be applied whilst still remaining valid and useful. In particular, he criticises the psychological basis of behaviourism for C/PBTE and advocates a greater attention to the cognitive development model.

29. Many of the criticisms and objections relate to the models and theories of C/PBTE rather than to observed effects of its application in practice. In many of the systems in operation, practitioners have modified their interpretations as a result of observed effects. One such modification, which carries with it a pointed criticism is that of Walker (1981). He asserts that "vocational teacher education programs that emphasis skill oriented teacher education without equally emphasising cognitive development could prevent PBTE from fulfilling its promise of maximising professional potential".

In pointing out the dangers of assuming that performance in training is sufficient, he suggests that three critical educational problems may arise:

"(a) teachers who may be unable to select the use of a particular skill when it is most appropriate;
(b) teachers who may not use a particular learned skill simply because they don't know why it is used in selective situations; and
(c) teachers who do not fully understand the magnitude of their actions (teacher behaviours) on themselves and others." (p.17).

30. In seeking to ascertain the extent of cognitive development in student vocational teachers following a course using performance based modules, Walker devised a test of cognition and showed that it cannot be assumed that a cognitive base exists even when "successful" performance has been observed. He recommended that cognitive assessment should become an integral programme component in professional preparation. At the same time he made it clear that although cognitive assessment was necessary, it was not sufficient. It should not be used to predict an individual's ability to perform certain teaching skills. Performance observation was more appropriate for this purpose.

Chapter 3 C/PBTE as a System

31. The purpose of this chapter is to review the application of the C/PBTE concepts to the reform of teacher training systems as a whole, rather than in the adaptive mode which simply serves to lubricate the workings of existing systems by offering alternative study materials.

32. A system of teacher training for vocational further education usually consists of a number of inter-related components, subject to varying degrees of control at various levels. There is a framework of law and regulation; a basis for financing and resourcing the activity; a sub-system of institutions or agencies for providing the training; and a client network of employing institutions, individual teachers and aspiring teachers. Added to this will usually be arrangements for certification, licensing of qualified practitioners and accreditation of the training agencies.

Any change in one component may have consequential effects on others, though this does not always follow. Change, for example, in the curriculum for teacher training, like change in the content and structure of the curriculum at other levels, is more likely to take place by piece-meal adjustment of individual curriculum elements by the training agent, than by revision which permits a complete redesign of the total curriculum.

33. Yet there are points in history when major redesign of systems is possible and where a different conception could be applied to guide that redesign. Recent revisions of further education teacher training in this country (ACSTT, 1976; DES, 1977) have already resulted in fundamental changes in the relationships between the various agencies and participants in the process. These revisions have however been approached more with the purpose of redistribution of control and resources than with any expressed intention of changing the curriculum basis of FE teacher training.

34. Whilst a review of the available courses for FE teacher training (mainly provided under validating arrangements with the CNAA) is beyond the scope of this study a number of observations can be made.

Within the general guidelines provided by the ACSTT Report (1976) there is considerable opportunity for the providing agencies, in association with their validating bodies, to vary the content, style and the delivery system. Yet it cannot be said that the competency/performance based movement has had significant impact on the recent reforms in FE teacher training. Both the Council for National Academic Awards (CNAA, 1978) and the Council for Educational Technology took steps to give C/PBTE some publicity, without any commitment to it as a system. The main effect of this publicity has been the adaptive use of some of the modular materials imported from the USA and described elsewhere in this report.

35. Notwithstanding the lack of a systematic application of C/PBTE to total courses, it is evident that the recent reforms have incorporated some of the features described by AACTE (1974) as desirable characteristics of C/PBTE. These include:

(i) A broader base for planning and decision making, within regions, between clients and providers;
(ii) More participation by employing colleges to give support to trainee teachers;
(iii) A closer integration of theory and practice.

Typical schemes for FE teacher training in the UK are still however largely based on group instruction for much of the time; they include a substantial element of theoretical studies derived from the educational "disciplines" and require evidence of cognitive achievement as a major element in certification requirements. The schemes are, moreover, definitely time based and do not readily permit individuals to progress at different rates towards the achievement of agreed performance or competence standards.

36. This brief sketch of current schemes in Britain is in no sense a criticism of the quality of the training provided. It simply seeks to describe the characteristics of the system against which fully functioning C/PBTE systems in the USA can be contrasted.

Two systems will be described. The first system, operated from Temple State University, serves a large region of Eastern Pennsylvania. The second is a smaller system designed essentially to serve one college and its clients in Prince Edward Island, Canada. Other C/PBTE systems exist in the USA and elsewhere, but these two are sufficiently representative to bring out the main system characteristics. Before the description of systems however, a brief sketch of the context for vocational teacher education in the USA may be helpful.

37. Vocational teachers in the USA generally teach at one of two levels: secondary or post secondary. At the secondary level, vocational courses are essentially of a pre-employment form and cover broad "service areas" or occupational groups. Students are aged 15 to 18 years and most are retained within the full time system of schooling until the age of 18 years.

At the post secondary level, there is a mixture of part time and full time courses in a very broad range including the kinds of work done by TEC, BEC and CGLI at advanced levels. Work for two year associate and four year baccalaureat degrees may be included in post secondary institutions such as community colleges and vocational-technical colleges.

38. Teachers for secondary vocational education require training and certification according to state laws. Not all states require post secondary teachers to be certificated, but most encourage and provide some form of training for those in public colleges.

The two main sources for the recruitment of vocational technical teachers are: (i) from degree programmes in areas such as home economics and agricultural education; and (ii) straight from industry; usually with proven industrial experience but sometimes without substantial paper qualifications.

39. Systems for the training of vocational teachers are the responsibility of the state and local education agencies, in association with the main providers of training, which are usually university departments. Credit courses for substantive qualifications generally lead to degrees, and the work done for basic teacher certification can usually be given credit towards a first degree.

40. The implications of change to a fully operational system of C/PBTE by any institution go well beyond curriculum matters. The management of the programme is affected in respect of admissions, completions, assessment and grading, records management for self pacing and the reorganisation of resource centres. The roles of teacher trainers and co-operating field staff are also changed, and require some definition to avoid confusion about duties and responsibilities.

Where C/PBTE is introduced for one programme within a multi purpose institution it may well need very different management to other college programmes. This can cause problems in a number of ways but clearly they are not insuperable as the first of the examples will show.

System Example No. 1 Temple State University, Philadelphia.

41. Program VITAL* is an in-service teacher education programme that became operational in 1973. It serves new teachers entering from business and industry with little or no formal teacher preparation. The new teacher has the status of an intern and remains such until he completes the programme and obtains provisional state certification.

42. The programme is individualised and learners are allowed to progress at their own rate. Although each is registered for credit bearing courses at the university each semester, they remain in the programme until all the "exit criteria" are met. This takes between one and three years in the majority of cases.

Each learner is required to learn 83 teaching skills (competencies), through the use of 30 directed self instructional modules. Modules may be used in any order desired and the amount of time devoted to each module varies with the individual.

43. The selection of modules is based on a needs assessment, completed by each intern and followed by a discussion of identified needs with a member of the programme staff. Short and long range goals are set, but these may be altered as the work progresses so as to reflect new learning priorities. Although this C/PBTE programme is highly individualised, there is provision for interaction among learners (80% individualised, 20% group instruction). Small group meetings are part of the operating procedure of Program VITAL.

44. Modules are used as basic learning units. The 30 modules required are drawn from the 100 developed by NCRVE, Ohio,** and described in Chapter 4. The 83 teaching skills are covered by the 30 modules.

45. It is important that the difference between 'directed self instruction" and "independent self instruction" be

*Vocational Intern Teaching that is Applied Learning (ref. – Adamsky et al. 1981 (a) p.21).
**See Appendix 1 for the complete range.

understood at this stage. Although some students use the modules without recourse to the help of others, most use them with the advice of programme staff. Review of the objectives, the learning experiences and the assessment procedures, before and during the learning process, is regarded as highly desirable for most students. Self evaluation is also regarded as a valued goal or process.

46. To highlight the need for tutorial advice in the process, a "Module Dropper" is identified as a tutor who simply hands out modules without the necessary support for the process of learning. The programme leaders, in their training sessions, warn the various resource personnel against this perversion of the modular mode (Adamsky et al. 1981 (b) p.12).

47. The programme involves local school teachers and administrators, as well as teacher educators. These assist in periodic evaluations of the whole programme. Each client institution also has a local Council of Educators, of an appointed local administrator, an elected local experienced teacher and a teacher educator from Temple University. This Council in effect controls the certification process, since it is responsible for reviewing the intern's progress through the modules and for verifying performance and competence.

48. The whole programme serves a dispersed population in urban, suburban and rural locations in about 60 schools of various kinds. Somewhere between 100 and 200 interns have been served in each year.

The staffing to operate this field based programme is differentiated, both through necessity and design. Each level has specific functions and responsibilities to perform. There is a Programme Co-ordinator responsible for the whole operation, assisted by a Staff Trainer who helps to prepare staff for their various roles. A Senior Teacher Educator sits on each local Council of Educators Review panel and helps to monitor local activities on behalf of the university.

49. The major responsibility for professional development of the interns is shared by members of the field staff. The Field Resource Person visits each intern weekly for performance observation and "helping conferences". Each intern also has a Resident Resource Person to help when the Field Resource Person is not in the school. This individual is a full time local teacher with only limited part time involvement with the teacher training programme.

50. This particular systematic ^{C}/PBTE programme has been regularly evaluated for formative purposes (Wichowski and Adamsky, 1976) and has encouraged Temple University to develop the ^{C}/PBTE approach in programmes for advanced teaching skills; supervising Co-operative Vocational Education; leadership skills and curriculum development. All these programmes incorporate the concepts which characterise ^{C}/PBTE and to a large extent operationalise the concept in the same way as Program Vital (see also Adamsky and Cottrell, 1975).

System Example No. 2 Holland College, Prince Edward Island, Canada.

51. Holland College introduced competency based instruction for its post secondary programmes in a variety of fields in 1970. All are now operating on this basis (Glendinning and Coffin, 1981).

The main reason for introducing competency based instructor training was to meet the need for teachers to be trained in the system being operated by the college for its vocational programmes at post secondary level. The college now requires all teachers to complete a training programme acceptable to the college during the first two years of employment. Teachers are also encouraged to take further, supplementary training elsewhere.

52. The competencies for the scheme were derived using a DACUM* analysis of the field of learning management. The analysis involves consulting internal and external practitioners under the direction of an analysis co-ordinator.

The main guiding element in the process is a master chart of competencies (see extract in Fig. 1 on page 15). This becomes the basis for individual learning plans and provides a profile for progress counselling, evaluation and record purposes.

*DACUM (Developing a Curriculum) – see NCRVE – Module A.7. "Conduct an Occupational Analysis" p.11 (1978). Distributed by Stam Press – Cheltenham.

53. On entry to the system the first task is for the teacher to review the chart and identify the skills that he/she can already perform. The staff development specialist then helps to determine where the individual starts on his/her personal learning plan. This provides short term goals which contribute to the cumulative achievement of the required range of competencies.

54. According to Holland College (Glendinning and Coffin, 1981) the key to success is the involvement and commitment by senior supervisors and administrators.

C/PBTE in this case provides the guiding concepts for a system which fits the needs of a college in a location where help from major specialist teacher training institutions is not readily forthcoming.

LEARNING MANAGEMENT

Name _____

C	CAN PERFORM THIS SKILL WITHOUT SUPERVISION OR ASSISTANCE AND CAN LEAD OTHERS IN PERFORMING IT
4	CAN PERFORM THIS SKILL WITHOUT SUPERVISION OR ASSISTANCE WITH INITIATIVE AND ADAPTABILITY TO SPECIAL PROBLEM SITUATIONS.
A	CAN PERFORM THIS SKILL WITHOUT SUPERVISION OR ASSISTANCE WITH PROFICIENCY IN SPEED AND QUALITY.
3	CAN PERFORM THIS SKILL SATISFACTORILY WITHOUT ASSISTANCE AND/OR SUPERVISION.
2	CAN PERFORM THIS SKILL SATISFACTORILY BUT REQUIRES PERIODIC SUPERVISION AND/OR ASSISTANCE.
1	CAN PERFORM SOME PARTS OF THE SKILL SATISFACTORILY, BUT REQUIRES INSTRUCTION AND SUPERVISION TO PERFORM THE ENTIRE SKILL.
0	HAS SOME KNOWLEDGE AND LIMITED EXPERIENCE, BUT NOT SUFFICIENT FOR PARTICIPATION IN A WORK ENVIRONMENT.

Ratings on the chart are based on industrial performance standards. They are confirmed by an instructor (a skilled and experienced person from the occupation) who views and evaluates performance as he would in the role of an employer or supervisor.

Instructor _____

Date _____

A letter of reference attesting to the individual's attendance, punctuality, and work habits, is available from the Registrar's office.

ASSIST IN DESIGN OF INDIVIDUAL LEARNER PROGRAMS	PARTICIPATE IN OCCUPATIONAL ANALYSIS	PARTICIPATE IN OUTLINING SKILL PROFILES	ORIENT LEARNERS TO OCCUPATIONAL REALITIES	ASSESS LEARNER BACKGROUND FOR GOAL ACHIEVEMENT	ORIENT LEARNERS TO INSTITUTION RESOURCES	ORIENT LEARNERS TO CHART	ASSIST LEARNER IN ESTABLISHING PRIORITIES AND GOALS
EVALUATE LEARNER PROGRESS	UTILIZE LEARNER SELF-RATINGS IN DETERMINING RATING LEVEL	RELATE RATING SCALE TO INDUSTRIAL PERFORMANCE	ORIENT LEARNERS TO PERFORMANCE REQUIRED FOR RATING	ASSIST LEARNER TO BE SELF-DIRECTIVE IN RATING AND OBTAINING VERIFICATION	RECOGNIZE INTERIM OR PROGRESSIVE SKILL ACHIEVEMENTS	ASSIST LEARNERS TO IDENTIFY OCCUPATIONAL READINESS	ASSIST LEARNERS TO IDENTIFY INTER-RELATIONSHIPS BETWEEN SKILLS FOR RATING PURPOSES
CREATE AND MAINTAIN LEARNING ENVIRONMENT	CREATE & MAINTAIN SUPERVISOR-EMPLOYEE RELATIONSHIP WITH LEARNERS	SET UP AND MAINTAIN RESOURCE CENTRE	PROMOTE LEARNER APPLICATION OF TECHNICAL VOCABULARY	PLAN FOR LEARNER ACCESS TO INSTRUCTOR(S) OR OTHER HUMAN RESOURCES	ADAPT TRAINING ENVIRONMENT TO REFLECT INDUSTRIAL CHANGES	SET UP TAPE RECORDERS AND AUDIO PLAYBACK UNITS FOR LEARNER USE	SET UP V.T.R. PLAYBACK EQUIPMENT FOR LEARNER USE
ASSIST LEARNERS IN OCCUPATIONAL SKILL DEVELOPMENT	SIMULATE WORK ENVIRONMENT	ANTICIPATE AND CONTROL HAZARDOUS SITUATIONS	PROVIDE MODEL OF OCCUPATIONAL ROLE BEHAVIOR THROUGH EXAMPLE	DEMONSTRATE EQUIPMENT OPERATION	COUNSEL AND ASSIST LEARNER DURING INITIAL USE OF EQUIPMENT OR TOOLS	DEMONSTRATE PHYSICAL DEXTERITY SKILLS	DEMONSTRATE OPERATIONAL PROCEDURES
ASSIST IN SELF LEARNING	DEMONSTRATE OPERATION OF LEARNING HARDWARE	ASSIST LEARNER IN LOCATING AND ANALYZING SAMPLES OF COMPLETED WORK	ASSIST LEARNER IN SELECTING FROM SEVERAL INFORMATION OPTIONS	ASSIST LEARNER IN INITIATING USE OF REFERENCE BOOKS AND P.I. MATERIALS	ASSIST LEARNER IN DETERMINING WHEN HE HAS ADEQUATE INFORMATION	ASSIST LEARNER IN ESTABLISHING AND MAINTAINING RELEVANCE OF RESOURCE CONTENT	ASSIST LEARNER TO DEVELOP & MAINTAIN INFORMATION GATHERING NOTES AND RECORDS
DEVELOP LEARNING MATERIALS	PREPARE OVERLAY TRANSPARENCIES	DESIGN QUESTIONNAIRES AND EXERCISES	PREPARE MATERIAL THAT LINKS, EXPANDS OR HIGHLIGHTS EXISTING RESOURCE MATERIAL	SKETCH CHARTS, DIAGRAMS AND SCHEMATICS	PREPARE STILL SCRIPTS	DEMONSTRATE SKILLS OR PROCEDURES FOR VIDEO TAPING AND MOTION PICTURE PRESENTATIONS	PARAPHRASE AND TRANSPOSE OR RECONSTRUCT PRINTED MATERIALS
COMMUNICATE WITH LEARNERS	PROVIDE TECHNICAL INFORMATION AT LEARNER LEVEL	EXPLAIN AND DISCUSS CONCEPTS AT LEARNER LEVEL	ASSIST LEARNER IN PLANNING JOB SEARCH AND OCCUPATION ENTRY	ASSIST LEARNER TO DEVELOP CONFIDENCE IN PLANNING OWN DEVELOPMENT	COUNSEL LEARNER IN MATCHING SKILL PROFILE AND INTEREST TO SPECIFIC JOBS	LISTEN TO AND DISCUSS LEARNER PROBLEMS NOT DIRECTLY RELATED TO PROGRAM	LISTEN TO LEARNER AND DISCUSS PROGRESS IN BEHAVIOR CHANGE
COMMUNICATE WITH STAFF IN TRAINING ENVIRONMENT	PREPARE ANECDOTAL RECORDS	PREPARE FOR AND PARTICIPATE IN CASE CONFERENCES	TAKE POSITIVE ACTION IN INITIATING DESIRED COMMUNICATION	MAINTAIN POSITIVE APPROACH IN COMMUNICATING	STIMULATE AND MAINTAIN INFORMAL COMMUNICATION WITH OTHER STAFF	OFFER CONSTRUCTIVE CRITICISM	EXPRESS PROGRAM NEEDS FOR ACTION
INTERACT WITH THE COMMUNITY	PROVIDE BALANCED DESCRIPTION OF PROGRAM STRENGTHS AND WEAKNESSES	ASSESS EMPLOYER PROBLEMS AND ILLUSTRATE VALUE OF TRAINED PERSONNEL	CONTACT INDUSTRY AND AGENCIES TO IDENTIFY EMPLOYMENT OPPORTUNITIES	PROVIDE DESCRIPTIONS AND DEMONSTRATIONS OF NEW TECHNOLOGY AND CONCEPTS	ESTABLISH AND UTILIZE ADVISORY COMMITTEE FOR OCCUPATION	PROVIDE ON-SITE DEMONSTRATIONS OF NEW TECHNIQUES AND EQUIPMENT	INITIATE EMPLOYER-LEARNER CONTACT LEADING TO POTENTIAL EMPLOYMENT
DEVELOP PERSONAL COMPETENCIES	MAINTAIN CONFIDENTIALITY	CAPITALIZE ON PERSONAL STRENGTHS	IDENTIFY AND EVALUATE COMMUNICATION WEAKNESSES	IDENTIFY AND EVALUATE TECHNICAL STRENGTHS AND WEAKNESSES	IDENTIFY AND EVALUATE PERSONAL STRENGTHS AND WEAKNESSES	PROJECT IMAGE OF ROLE OF INSTRUCTOR IN LEARNING SYSTEM	DEVELOP AND MAINTAIN PERSONAL CODE OF PROFESSIONAL ETHICS
PERFORM ADMINISTRATIVE OR RELATED FUNCTIONS	CONTROL AND BALANCE EXPENDITURES WITHIN BUDGET	PARTICIPATE IN AND CONTRIBUTE TO MULTI-DEPARTMENTAL TASK FORCES	DELEGATE ADMINISTRATIVE AND CONTROL RESPONSIBILITY TO LEARNERS	NEGOTIATE FOR AVAILABLE SPACE AND RESOURCES	ASSEMBLE AND MAINTAIN RESOURCE REFERENCE FILES	MANAGE RECORD KEEPING SYSTEM	RECOMMEND TERMINATION OF LEARNERS
	INTERVIEW AND MAKE RECOMMENDATIONS REGARDING PROSPECTIVE STAFF	COUNSEL STAFF TOWARD PROFESSIONAL DEVELOPMENT	RECOMMEND TERMINATION OF STAFF	INTERPRET AND APPLY GOVERNMENTAL LAWS AND REGULATIONS	INTERPRET AND APPLY INSTITUTIONAL POLICIES AND REGULATIONS		

Fig. 1 Record of achievement

Source Holland College P.E.I.

Chapter 4 Competencies and Modules

Identifying and Verifying Competencies

55. The concept of the clearly stated competency as a component of the learner's occupational role, is at the heart of competency based education. If the conceptualisation, identification and statement of competencies is unsound, it must follow that the remainder of the CBE process will also be unsound. Much of the research and development effort in the USA, particularly in the field of vocational teacher education, has therefore been directed towards identifying competencies and verifying them with incumbents of the profession.

56. The earlier definition of a competency as an element of the role of the teacher is one which is widely used in vocational education in the USA and which naturally points to occupational analysis as a way of identifying the competencies and making them explicit. This definition is however too limited for some of those who advocate a competency based approach.

57. Spady (1977) defines competencies as:

> "indicators of successful performance in life role activities, be they as producer, consumer, political citizen, driver, family member, intimate friend, recreational participant or life long learner".

Spady also distinguishes competencies from the "enablers" or building blocks which go to make them up. These "enablers" can be equated to the performance objectives derived by Cotrell (1972) in the studies described later in this chapter.

58. In efforts to derive valid competencies there has been great variation in defining the level of specificity. At one end of the scale, 2,700 competencies were stated. At the other end of the scale, 4 generic competencies were defined for a university programme (Norton et al. 1978). Another writer indicates only two competencies, i.e. (i) teachers can state objectives and (ii) the pupils demonstrate growth consistent with stated objectives (Hite, 1973). The latter statement by Hite can hardly be taken seriously and must be seen as a criticism of the encyclopeadic approach which tends to bedevil both the objectives based and the competency based models.

59. Recent work by Spencer (1979) and Klemp (1977), building on earlier studies by McClelland at Harvard University, provides a well conceptualised approach, an empirical base and a sophisticated methodology for the development of competencies. This work focuses on the competencies of the *person* rather than the *job*. It seeks generic and transferable 'process' competencies which have predictive validity for performance in specified roles. The competencies include knowledge, skills, abilities and other characteristics tied to effective performance. They are largely empirically derived and result in competencies which are observable and measurable in a respectably reliable way. The main method is to (i) identify individuals who are successful in their professional role ('success' in terms of results, track record and the ratings of peers, superiors and students) then (ii) to find out what they *are* doing that makes them successful and (iii) to examine how and why they are doing what they do (Klemp, 1977).

60. Competency identification which focuses on the characteristics of people, tends to yield a quite concise list of generic competencies such as:

> Positive Expectations (of others);
> Accurate Empathy or Interpersonal Diagnostic Skills;
> Proactivity (in solving problems);
> Planning and organizing.
>
> (Spencer, 1979)

Different roles yield somewhat different competencies for successful performers, but there can be a high degree of transfer between roles. A study by Schneider and others (1981), following the personal generic competencies approach, refers to teachers and mentors in non-traditional higher education programmes.

61. Competencies validated for these particular roles are given, together with positive indicators of their presence, and negative indicators which point to the possible misplacement of staff and/or the need for further training or retraining. Examples are:

Competency	Positive Indicators
1. *Has positive expectations of students.*	Expresses view that average students are capable (+). Identifies and affirms others' capabilities (+). Expresses view that students are capable of change (+). Permits modifications of learning contracts which are consistent with students learning objectives (+). **Negative Indicators** Negative regard for students (−). Expresses view that students are stupid and incapable of change (−). Identifies student weaknesses without suggesting ways to help (−).
2. *Creates a context conducive to adult learning.*	Works to understand students' frames of reference (+). Works to establish mutuality and rapport (+). Holds students accountable to their best learning interests (+).

62. Competencies such as the examples above, are regarded by Spencer (1979) as stable dispositions of individuals, which are nevertheless capable of change and development in willing participants. A key element in staff development of this kind is awareness raising and a discrepancy analysis of individual needs. Spencer holds that the diagnosis of personal needs is in itself a powerful motivator for individuals to help themselves, even without the intervention of others.*

63. The generic competencies approach would seem to have quite powerful potential in staff development for the "New FE" (Melling 1981; FEU, 1981a). Although specific, job derived, competencies are also needed in this area, the nature of the new FE, with its negotiated, person centred approach does require teachers with competencies which enable them quickly to adapt to new student groups, individualised learning, and to curricula with bases other than specific occupations and defined training needs.

64. Through the identification of competencies of the job-centred kind, the base line study for vocational teachers in the USA by Cotrell and others (1972) has had considerable influence on the development of ^{C}/PBTE in that country. The best known set of training modules (NCRVE; 1977) is constructed on the Cotrell study and tends to provide one of the most readily available and influential impressions of what ^{C}/PBTE is about for British educators, despite the existence of either interpretations of ^{C}/PBTE in the USA.

65. This particular search for consensus about competencies, involved an occupational analysis to generate an initial list of "performance elements" related to vocational teaching. These elements were verified and extended through critical incident studies involving 750 teachers in a representative sample. An extension of the work also covered the competencies involved in the role of the teacher-co-ordinator of co-operative vocational education. (This is a form of work placement of full time students in which experiential learning and school/college studies are co-ordinated). The resulting list, after refinement, provided 384 performance elements which were eventually incorporated into the 100 ^{C}/PBTE modules. (See Appendix I).

66. An example of a typical element (competency) from the role of the teacher co-ordinator, may serve to illustrate the style used and the extent to which description is delimited by a requirement for observable behaviour in the criteria for assessment of the competency.

"*Assist the student-learner in the solution of problems related to on-the-job training criteria:*

1. Student records and other background materials were available for reference.
2. The student was assisted in defining the problem.
3. Possible solutions for the problem were identified.
4. Open communication was maintained between school personnel and the co-operating employer to help prevent and solve job related problems.
5. A follow up was made to determine if the problem had been solved." Source Cotrell et al. (1972).

*Some approaches to Individual Needs Assessment have been given in Appendix VI of *Teaching skills*. FEU, June 1982.

67. Even a cursory examination of the criteria reveals that these hardly constitute a tight behavioural specification. Whilst the criteria provide a check list, the level or quality of their achievement must obviously be related to context and be judged subjectively, usually by observer ratings.

Role Mapping

68. The 384 competencies identified by Cotrell et al went a long way to providing a comprehensive description of the vocational teacher role. Since 1977 other needs have emerged, and the list has been supplemented by work on competencies relating to special needs students, to career education and to the teaching of basic or generic skills (see Appendix 6).

69. Not every teacher needs all of these competencies all of the time or even for some of the time. The total list however provides an atlas of competencies, derived from consensus studies, from which an individual can map out his role. The list is not fixed; it changes as new teacher functions are identified and as others diminish in significance. There is however an inevitable timelag between the emergence of a new need or innovation, and the availability of the information from a thorough field study to identify what additional, new competencies are involved. To this extent the C/PBTE design base may tend to favour the status quo and be somewhat retrospective in its relevance. Yet, other approaches to curriculum design may be even less responsive to current and future needs.

70. Apart from the work of the classroom teacher, the identification of competencies has been extended into the higher levels of curriculum development and into the training of vocational administrators or managers. Modules for training at this level have been devised using much the same format as those for basic teacher training (NCRVE, 1981).

71. The comprehensive list of competencies provides a starting point for the initial training of new teachers straight from industry or business. Their background in the USA is, if anything, more varied in terms of technical qualifications than in the UK. However the needs in terms of initial training are much the same. In the early stage it is a matter of providing basic instructional competencies and confidence in class management. These 'survival skills' form the initial core of many of the professional preparation programmes and may be demanded by state licensing requirements. Additional competencies on an optional or elective basis are added to the study programme to cater for the particular needs of the newly appointed teacher and for his further professional development.

72. To ensure local acceptance, local relevance and up to date competencies, yet at the same time to avoid costly research into competencies every time a local programme is adjusted, it is possible to use a "master check list" of competencies and a process of local verification. The term verification is used rather than validation, since the process sets out simply to find out which of the stated competencies are perceived as being relevant and essential or desirable for teachers in one area, institution or specialism.

73. The process of local verification has widely been used in the United States to justify the selection of competencies for courses at given levels. The content of a "survival kit" for a new teacher can be based on a selection of competencies identified by the employer institutions and other interested parties. The teacher training programme at the University of Maine at Portland-Gorham, for example, is based on a "prioritization" study conducted in the New England States (Berry 1975). This researcher asked a wide selection of teacher educators and administrators to judge whether each of the list of 100 competencies/ modules was (i) required (ii) desirable or (iii) not needed. The Delphi technique of consensus forming was used to elicit these judgements.

74. In a replication of this particular study in England, Tuxworth (1976) showed that there was a high degree of agreement between heads of departments in colleges, teacher trainers and experienced teachers about should be included in an initial teacher training course. It was also shown that the 100 module titles which embrace the 384 competencies derived by Cotrell et al (1972) were useful as a starting point for course design in the UK. There was a high level of agreement indicated when a comparison was made between the perceptions of UK and USA educators about the priority of the stated module titles such as "Employ the Project Method;

Develop a Lesson Plan etc." A rank order correlation between the two studies produced a coefficient (Spearman) of +0.786.

Modules

75. Although modularization is quoted as a desirable associated characteristic of C/PBTE (AACTE, 1974) it is not essential to the concept or to a delivery system. Whilst in most of the C/PBTE systems for vocational teachers in the USA the modules are a central and controlling feature, it is possible to devise a system using the two key elements of (i) lists of competencies and (ii) performance assessment instruments and procedures. In this design the delivery system in between these elements could take whatever form the providing agency determined.

76. Although four of the five essential elements of C/PBTE i.e. identified competencies, stated criteria for performance, instruction focused on competencies and assessment based on performance, could be contained within a conventional programme of group instruction, it is difficult to see how the fifth and vital element could be accommodated. This fifth element is that "progress through the programme is determined by the demonstration of competency in teaching tasks rather than by time or course completion" (Hamilton, 1981).

A move from a time base to a standards or competency base would be difficult to achieve within a conventional course with its "lock step" group instruction and norm referenced achievement tests. Considerable changes in organisation and the use of resources are involved when a fully functioning system is installed (Wichowski and Adamsky, 1976).

77. The module which covers one or more competencies provides a flexible resource for an individualised self-paced learning system, whether of the C/PBTE model or otherwise. However there is no universal definition of what a module should be. The term is used simply to describe a statement of the objectives and content of a unit in a course (e.g. EITB modules for Engineering Crafts) or can refer to a major component of a degree or certificate course in higher education.

78. A module as related to the implementation of C/PBTE is generally defined as a printed package of learning activities and materials designed to produce one or more stated competencies. Modules produced for C/PBTE may vary from a single page outline, to a totally self contained booklet comprising all the necessary information and directions for use (Norton et al. 1978, p. 24).

Modules produced for C/PBTE in the USA have variously been designed to serve the needs of teachers working with one course in one institution, for use within one state or for widespread national use. Norton (1978) describes a number of these variants and their structure (pp 49–59).

79. Where a comprehensive range of modules exists, such as that produced by the NCRVE (1977), the providers of courses and programmes can select the number and mix of modules to suit their local purposes. A review of C/PBTE courses by Norton and others (1978) showed considerable variations in the numbers of modules required for completion of rather similar courses. This variation suggests that individual tutors and institutions are, in practice, applying their own interpretation of work loads and indeed levels and standards of performance. Used in this way the C/PBTE modules can hardly be seen as a threat to the professional independence of teacher trainers.

80. There would seem to be considerable advantages in having instructional packages which are self contained and do not require the user to search for a whole range of other resources, particularly textbooks and journal articles. Self containment may however lead to a rather restricted and impoverished kind of study, particularly when dealing with ideas and problems where divergent reflection is needed and where no clear cut solutions are evident.

81. A balance between the self contained module and the open ended form of study has been achieved in the UK by the Open University. Their study workbooks are an acknowledged success; combining structured work, selected readings and course textbooks which give the student a genuine but manageable range of study options. The study pattern is supported by radio and television programmes.

Modules have been developed on a very limited scale in the UK for the generation and improvement of

teacher skills but without particular reference to competency or performance based rationales. The project undertaken at Manchester Polytechnic in 1978–79 produced, as part of the programme, a series of five modules for use with teacher workshops and gives self study units as an alternative to the workshop materials (Jones, Hollinshead and Yorke, 1980). These modules and study units covered teaching methods thought to be particularly appropriate for staff development in relation to Technician Education Council programmes.

82. Another example of teacher education modules for specific curriculum purposes is provided by Stillie (1981). A set of seven modules was designed to help with staff development of the Unified Vocational Programme which forms one strand of a widening provision for vocational preparation in the UK. The format of these modules is self instructional and requires participative learning, however it does not rely on a competency or performance based design.

83. The Science Teacher Education Project (1974) sponsored by the Nuffield Foundation produced a series of eight books which firmly relate curriculum development and teacher education. A progressive course is offered which focusses on the study and evaluation of the learning process in the classroom and laboratory, together with training in the use of the course materials. This project goes beyond a simple check list of competencies and the materials require considerable intellectual effort to produce the concentric and coherent growth in understanding which is sought (STEP: 1974).

84. A different approach has been taken in a Council for Educational Technology project for the in-service education of teachers (CET, 1982). The project takes particular account of the well known resistance of many teachers to curriculum and in-service training materials which have been produced and tested elsewhere. Accordingly the investigation concentrates on the factors which affect the successful production and use of INSET materials by a LEA for use with its own teachers.

85. Self instructional booklets of a non-directive type which help teachers in secondary school to improve their teaching skills have resulted from a DES Teacher Education Project and provide materials which are "advisory in emphasis, rather than prescriptive" (Kerry 1981). The format here is not competency based but sets out activities in the sequence of preparation, action and reflection related to management and teaching skills. Clearly the effect is intended to be improved competency but the conceptual framework of C/PBTE has not been found necessary for the purposes of the project.

Notwithstanding the fact that these particular booklets have been purchased and found helpful by a large number of individual teachers and schools the project has provoked a strong critical reaction from education theorists in one quarter, who seem to see in it sinister implications (TES 1982). The comments made in this particular article echo some of those made by Smith and others (1975) in relation to C/PBTE.

86. Other work in progress in the UK is that by members of the Further Education Research Network (FERN, 1982), an association of FE teachers which seeks to promote more effective teaching and learning through action research and college based activities. Individualised learning in teacher education has been a significant element in courses at Dundee College of Education. Distance learning, which can utilise some of the elements of C/PBTE, has also been used in the CNAA Postgraduate Diploma in Educational Technology run by Jordanhill College of Education, Dundee College of Education and Plymouth Polytechnic.

Module Format for C/PBTE

87. A module which is intended to be performance based has, of necessity, to be directed towards the eventual achievement and assessment of one or more competencies in a real setting. In some cases however the performance outcome of the module is a product such as a lesson plan, curriculum unit or a workshop layout which is assessed in terms of stated criteria. For teaching acts simulated performance may be accepted as evidence, by agreement, though real performance is preferred. Video taped activities may be used for post-event assessment purposes, but these often limit the activity to be assessed.

88. The format chosen for the NCRVE modules (Norton and Huang 1977) provides four major sections which would seem to be indispensable when the modules are used for directed self study. The sections are:

Introduction to give a frame of reference for the entire module i.e. its relationship to other modules, definition of terms unique to the module and the importance of the competency to be developed.

Information about the Module which lists the performance objectives, the resources needed and the pre-requisite competencies where appropriate.

Learning Experiences of progressive complexity and in a variety which includes information sheets, case studies, assignments and activities to develop the competencies. Feedback procedures are included, self checks and, eventually, performance check lists which require the involvement of a resource person in the final assessment.

General Information on the NCRVE Modules is given at the back of each activity. This section includes terms common to all modules and guidance on performance assessment.

Short extracts from a typical module are given in Appendix 7.

89. The reviews of the use of NCRVE modules given in the various appendices to this report indicate that their self contained nature and clear step by step format were helpful features to UK users. Professional graphics and printing seem to give the materials more authority and to stimulate users in a way that typescript may fail to do.

Further Development

90. The original series of 100 modules developed by the NCRVE covered what might be termed the role of "mainstream" vocational teachers. Since 1972, when the original research was initiated, a widening and changing role for vocational teachers has been accepted. The effects of legislation and social movements have focussed attention on the education of "special needs" or "exceptional" students, careers counselling, basic skills teaching and equity in terms of sex and race.

91. The NCRVE has conducted further research, with the aid of federal funding, to prepare lists of verified teacher competencies for these special aspects of education. There will be an eventual revision of the original 100 modules, but additional materials are in course of preparation to satisfy an immediate demand for help with the 'special aspects' competencies. A list of the materials under development is given as Appendix 6.

Other recent work has given some attention to the role of vocational education administrators. This seems to be a logical progression in that there is competency based education for students at secondary and post secondary levels, for their teachers and now for the administrators who manage programmes and institutions.

92. A series of C/PBTE modules for Vocational Education Administrators is now published (NCRVE 1981) and includes competency based materials relating to planning, organizing, administering, controlling and evaluating in relation to secondary and post secondary vocational education.

Typical modules are "Provide a Staff Development Program'; "Direct Curriculum Development" and "Direct Program Evaluation".*

93. Considerable interest in C/PBTE approaches and materials has been shown by private colleges and industrial training interests in the USA, and consortium arrangements have been established to promote further development and co-operation in the dissemination of the existing materials, and those for new purposes as they are identified.

94. The value of modular materials for assisting the training of industrial trainers in defined competencies, appropriate to the programme and the location of the learning activities, has yet to be fully tested and realised. Although sales of modules in the USA have been made to a great variety of agencies, both industrial and educational, and the potential value is evident, it has not yet fully been exploited. The need to promote association with the industrial sector has however been recognised by the NCRVE and some attention has been given to the form that such modular materials might take (Harrington 1982, p. 83).

*(These modules have been examined and although they refer to the USA legislative framework they do contain material of interest to UK educators).

Chapter 5 Conclusions and Prospects

95. There is widespread agreement that the training of trainers and staff development in FE have a key role in bringing about necessary changes. Moreover the quality of the outcomes of training and vocational education hinges on the relevance and quality of the training received by the trainers, whether in industry or in the education service. There is an emphatic shift from institution based learning to industry/commerce based learning supported by the further education service in a variety of ways (MSC, 1982 : Young, 1982). This requires a greater level of cooperation between FE and other training agencies, a sharing of training expertise and a willingness to adopt new practices. New ways of working inevitably demand new or revised competencies on the part of the trainers.

96. Although competency based education of any kind and competency/performance based teacher education in particular should not be seen as an easy general remedy for all assumed shortcomings of education and training, the concepts, systems and materials offer an approach which can help in some respects. While the actual use of C/PBTE in the UK is very limited at present, it clearly has considerable potential as one operational response to the vast amount of staff development activity which is needed to meet both the scale and the rate of changes already planned.

97. Inevitably, much of the pressure for change in vocational education refers to those areas which are politically and socially most urgent. Yet the medium and longer term development of the FE system must include proper articulation between the various stages of the system and progression from vocational preparation to more specific training and education (FEU, 1981c). Staff development, concurrent with curriculum implementation, is again seen to be necessary and the process reaches out to levels and areas of FE not previously involved with innovatory activities concerning vocational preparation.

98. The maintenance and improvement of existing "mainstream" or specific vocational education through CGLI, RSA, TEC and BEC brings regular staff development demands which are of a particular rather than a general nature. Since the awarding bodies usually initiate quite significant and far reaching changes, there would seem to be a case for those bodies to take a closer interest in the links between specific curriculum innovations and staff development needs. Support for such innovation through competency based modules would be one way of assisting the processes of innovation and avoiding some of the dysfunction arising from the mandating of change without the preparation and support necessary to achieve it. Many curriculum and examination changes in the past have been initiated without concurrent support for staff training. It has been assumed that everyone concerned has been willing and able to cope and that, in any case, staff development was no concern of the agencies initiating the changes. Only later do the deficiencies due to inadequate preparation and dissemination emerge (Barry, 1974 and FEU, 1981b.)

99. Systems for C/PBTE in parts of the USA and to a very limited extent in Australia, have been described in this report and have been especially notable in one respect. A move towards partnership in teacher training between providers and clients has been made possible through the more open process which C/PBTE embodies. Some of the mystique and institutional restrictions which surround the teacher education curriculum have been removed. Better access to training, more relevant content, more reliable assessment have resulted and the ownership of the whole process is seen to be shared. Initial FE teacher training in England and Wales has moved significantly in the same directions as a result of recent reorganisation but there is perhaps scope for additional research and evaluation to further help to link initial training to practice and to the continuing education of teachers. Such R & D work would obviously need to take account of any evaluation of the several existing initial training schemes and of the various reports of the Advisory Council for the Supply and Education of Teachers (ACSET).

100. There is no evident example of a fully systematic application of C/PBTE to a full course of further education teacher training in the UK. Certainly there is none to compare with those described from the USA and Canada in Chapter 4. However, the small scale experiments and survey reviewed in Appendices 2 and 3 of this report show a modest but definite interest in modular materials and a consciousness that some of the potential effects of C/PBTE are desirable. The strength of this interest would seem to be related to some extent to

perceptions of C/PBTE as represented by the NCRVE modules and their utility in the UK context.

101. There are obvious cost benefits when developing learning materials, if it is possible to extend and adapt materials which have already been well tried elsewhere. However, the context of application may be all important; what works overseas is worthy of close consideration but cannot be taken as automatically valid or sufficient for the special contexts of the UK.

102. The formidable cost of developing, producing and disseminating a full scale modular resource bank should be noted. Two million dollars for the basic 100 modules has perhaps been well justified by the wide market for them (Adams and Patton, 1981). It would hardly be justified to ask for resources of this magnitude in the present financial climate in the UK. Yet there is much less cost in a pragmatic development of the ideas and materials of others, with due regard of course to copyright where this exists.

103. It is doubtful whether initial teacher training requires more curriculum materials for the inculcation of basic instructional techniques, whether of the teacher or student centred variety. Imported materials such as some of the NCRVE modules provide an adaptable resource, particularly in regard to instructional techniques, and UK users have shown themselves to be able to interpret them and make the necessary cultural translation. There would seem to be little advantage in Anglicising materials which are already useable in their existing form. This is not however to deny the need for appropriate support materials for staff development to meet new and emerging needs. The most recent work of the NCRVE in the USA listed in Appendix 6, should be noted in this respect.

104. The C/PBTE approach as developed in the United States does not meet with universal approval and this has been acknowledged elsewhere in the report. The predominant approach where C/PBTE has been adopted in the USA has been a very instrumental one, heavily influenced by a tight behavioural model and relying on role analysis focussed on the demands of the job. Many criticisms have been levelled at competency based education because some of its advocates have tended to emphasise lists of discrete skills rather than to create a coherent educational programme. It is alleged that the philosophical base is ignored and the cognitive component neglected in the pursuit of discrete skills. Yet it could be argued that many of these criticisms can be met within a sensitively designed and managed C/PBTE scheme, without foregoing the essential features of the concept.

105. The competency based approach is open to more than one interpretation. In this regard it is suggested that the work of Spencer (1979); Klemp (1977) and Schneider et al. (1981) could usefully be applied in conjunction with the more detailed job/task centred approaches which have been the main focus of this report. An outline of the broader interpretation of competency is given in Chapter 3; but the essence is that generic competencies can be derived from a study of what successful practitioners in a given professional field actually do, and how they differ from less successful people in the same field. These generic competencies are usually few in number and relate to the qualities and activities of the person rather than to the functions of the job as such. They have a controlling effect on the way, for example, curriculum specific skills are applied. This is not to say that the generic skills are sufficient without the specifics. The two complement each other.

106. Needs assessment is one other area where role derived and verified competencies may have utility and potential. The assumption is that teachers who are enabled to assess their own needs in relation to changed circumstances are more likely to resolve their own needs. Teachers can use appropriate statements of competencies to determine their training needs and to identify the resources, external or internal, required to meet them. Modular resources for self help, in-house training and guided improvement have been found useful in the few cases where they have been tried and reported in the UK and where they have been employed on a wider scale elsewhere.

107. Although a number of 100 NCRVE modules are useful and adaptable to the UK context in regard to basic instructional techniques, it has to be pointed out that a considerable number are designed specifically for the system in the USA. The legal, organisational and cultural characteristics of the USA vocational education system are such that some of the modules would be of little help

elsewhere. It has to be repeated however that any comprehensive set of modules of this kind provides a bank from which individual staff development programmes and group courses can be resourced. The onus of course design and control is with the local agency; the modules simply assist the process.

108. Printed modules on their own can help but teacher/instructor training is also about human interaction. Modules offered as a substitute for dialogue and student/mentor interchange will not generally succeed. There is some risk of abuse of C/PBTE where the concept is narrowly interpreted as being entirely about packaged materials and where programme administrators try to cut costs by eliminating the interpretative and mediating function of the professional teacher educator. It has been shown in some cases however that printed modules can actually increase the time which tutors devote to tutoring when they are relieved of some routine material preparation.

Suggestions for Further Action

109. This review, in attempting to show the features and potential of competency/performance based vocational teacher education as a distinctive form of initial teacher training and further staff development, has been able to draw on only scanty evidence of research and trials in the UK. Such development projects as exist have concentrated on teacher training support materials, but without particular emphasis on the description of competencies or performance criteria. With the notable exceptions of the work carried out at Manchester Polytechnic (Jones et al. 1980) and Jordanhill College (Stillie, 1981), the training support materials have related to the schools sector.

110. The dispersed pattern of control of the further education teacher training system means that any restructuring of a complete course on C/PBTE lines would require an initiative from one of the providing institutions and the approval of its validating body. Such an initiative would probably require more evidence than is now available that C/PBTE is likely to provide sufficient advantages as a full system to merit the risks and costs inherent in full scale implementation. However, it is argued that there is enough information and prima-facie evidence in this report to encourage experimentation within existing programmes to derive some of the benefits which C/PBTE offers. There is an even stronger case for adopting a competency based approach for meeting some of the newer and more urgent demands for staff development arising from changes in 16–19 education and training.

111. Accordingly a number of suggestions for action are offered:–

(i) Further thought and study should be given to the conceptual background to vocational teacher education and staff development for the 16–19 age range in the light of the rapid changes taking place in FE, industrial training and in the post 16 schools sector.

(ii) A development project to identify the competencies needed by further education teachers and trainers in working with specific curricula and client groups should be supported by FEU. This would result in clusters of competencies derived from study of the roles of teachers and trainers.

(iii) The concept of underlying, transferable or generic competencies for FE teachers and industrial trainers should further be explored. It is suggested that the work mentioned in Paragraphs 59–62 should be considered in this respect.

(iv) The major examining and awarding bodies could, usefully, be encouraged to promote the production of staff development support materials in connection with specific changes and improvements in their own schemes. C/PBTE offers useful models for such materials and their implementation.

(v) The work currently being undertaken in the USA, particularly at the National Center for Research in Vocational Education, has many parallels with staff development activities in the UK (see Appendix 6). A positive link for cooperative development could usefully be established between FEU and the NCRVE.

(vi) Modular resources for in-house training, individual self help and guided improvement in relation to identifiable innovations within the Youth Training Scheme and for the proposed 17+ examination could be developed. Such development would supplement the resources for existing courses but could be used, on an experimental basis, as a competency based model for new training courses.

The interest and support of MSC should obviously be sought for a development project along these lines.

(vii) The interest of a number of course tutors on the CGLI 730 Further Education Teachers' Certificate in competency based materials was noted in the brief survey described in Appendix 3. It may be that more extensive inquiry is justified here and that CGLI may wish to consider the competency based approach in any future revision of the 730 examination and curriculum.

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Abbreviations

ACSTT	Advisory Committee on the Supply and Training of Teachers.
ACSET	Advisory Committee on the Supply and Education of Teachers (successor to ACSTT).
AACTE	American Association of Colleges of Teacher Education – Washington D.C.
AAVIM	American Association for Vocational Instructional Materials – Athens, Georgia.
BEC	Business Education Council.
CBE	Competency Based Education.
CGLI	City and Guilds of London Institute.
C /PBTE	Competency and/or Performance Based Teacher Education.
DES	Department of Education and Science.
DOE	Department of Employment.
EITB	Engineering Industry Training Board.
FE	Further Education.
FEU	Further Education Curriculum Review and Development Unit.
INSET	In-Service Education of Teachers.
LEA	Local Education Authority.
MSC	Manpower Services Commission.
NCRVE	National Center for Research in Vocational Education, OSU, Columbus, Ohio.
TAFE	Technical and Further Education (Australia).
VECS	Vocational Education Curriculum Specialist (USA).

Appendix 1 Vocational Teacher Competency Profile Based on 100 NCRVE Modules.

(With acknowledgements to the National Center for Research in Vocational Education at The Ohio State University Columbus, Ohio.)

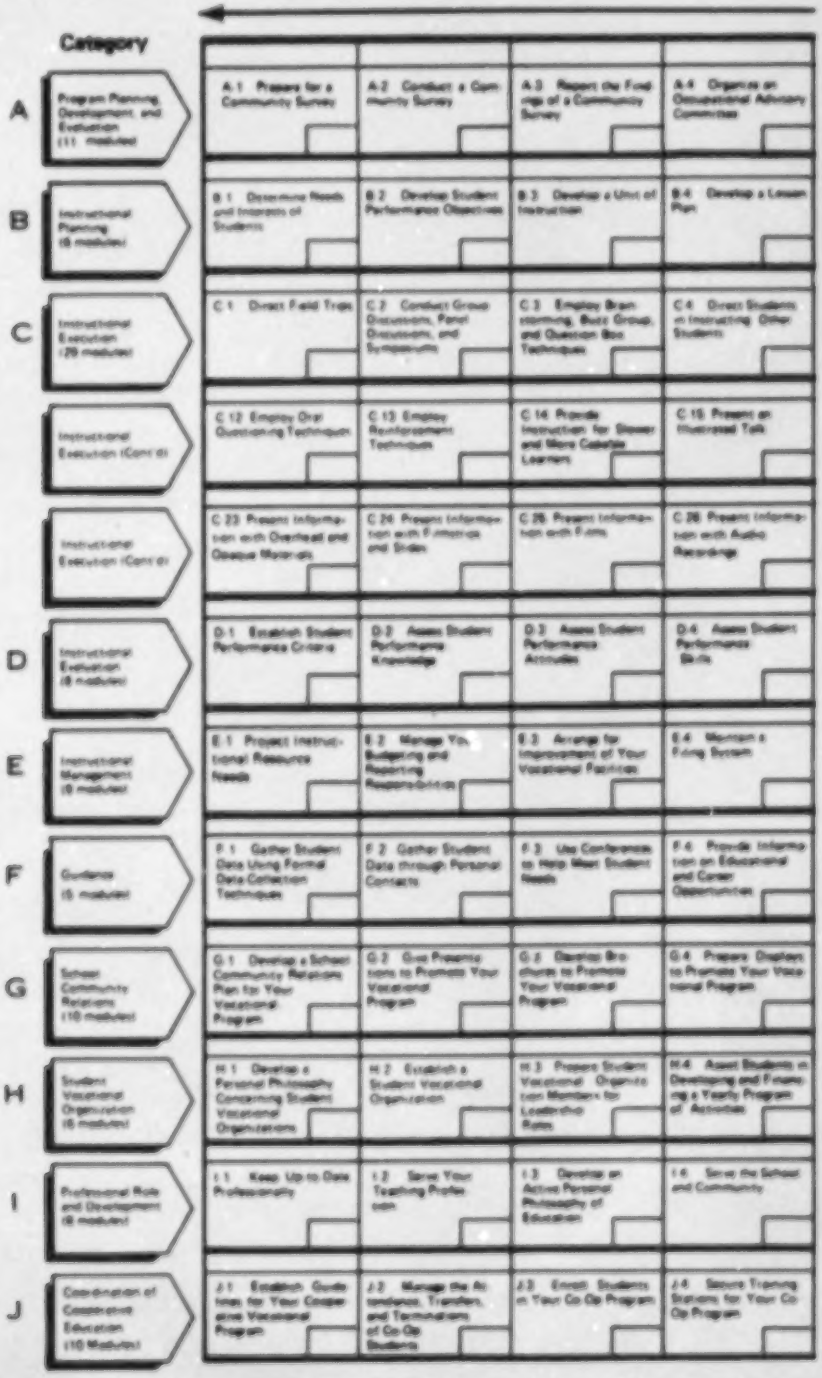
VOCATIONAL TEACHER COMPETENCY PROFILE

Name _____ Address _____

Institution _____ Date Started _____

Resource Person(s) _____

PBTE


Category
A
Program Planning, Development, and Evaluation (11 modules)
A-1 Prepare for a Community Survey
A-2 Conduct a Community Survey
A-3 Report the Findings of a Community Survey
A-4 Organize an Occupational Advisory Committee
B
Instructional Planning (8 modules)
B-1 Determine Needs and Interests of Students
B-2 Develop Student Performance Objectives
B-3 Develop a Unit of Instruction
B-4 Develop a Lesson Plan
C
Instructional Execution (29 modules)
C-1 Direct Field Trips
C-2 Conduct Group Discussions, Panel Discussions, and Symposiums
C-3 Employ Brainstorming, Buzz Group, and Question Box Techniques
C-4 Direct Students in Instructing Other Students
Instructional Execution (Cont'd)
C-12 Employ Oral Questioning Techniques
C-13 Employ Reinforcement Techniques
C-14 Provide Instruction for Slower and More Capable Learners
C-15 Present an Illustrated Talk
Instructional Execution (Cont'd)
C-23 Present Information with Overhead and Opaque Materials
C-24 Present Information with Filmstrips and Slides
C-25 Present Information with Films
C-26 Present Information with Audio Recordings
D
Instructional Evaluation (8 modules)
D-1 Establish Student Performance Criteria
D-2 Assess Student Performance Knowledge
D-3 Assess Student Performance Attitudes
D-4 Assess Student Performance Skills
E
Instructional Management (9 modules)
E-1 Project Instructional Resource Needs
E-2 Manage Yo... Budgeting and Reporting Responsibilities
E-3 Arrange for Improvement of Your Vocational Facilities
E-4 Maintain a Filing System
F
Guidance (5 modules)
F-1 Gather Student Data Using Formal Data Collection Techniques
F-2 Gather Student Data through Personal Contacts
F-3 Use Conferences to Help Meet Student Needs
F-4 Provide Information on Educational and Career Opportunities
G
School Community Relations (10 modules)
G-1 Develop a School Community Relations Plan for Your Vocational Program
G-2 Give Presentations to Promote Your Vocational Program
G-3 Develop Brochures to Promote Your Vocational Program
G-4 Prepare Displays to Promote Your Vocational Program
H
Student Vocational Organization (6 modules)
H-1 Develop a Personal Philosophy Concerning Student Vocational Organizations
H-2 Establish a Student Vocational Organization
H-3 Prepare Student Vocational Organization Members for Leadership Roles
H-4 Assist Students in Developing and Financing a Yearly Program of Activities
I
Professional Role and Development (8 modules)
I-1 Keep Up to Date Professionally
I-2 Serve Your Teaching Profession
I-3 Develop an Active Personal Philosophy of Education
I-4 Serve the School and Community
J
Coordination of Cooperative Education (10 Modules)
J-1 Establish Guidelines for Your Cooperative Vocational Program
J-2 Manage the Attendance, Transfers, and Terminations of Co-Op Students
J-3 Enroll Students in Your Co-Op Program
J-4 Secure Training Stations for Your Co-Op Program

COMPETENCY RATING SCALE

1. Poor:	The teacher is unable to perform this skill or has only very limited ability to perform it.	3. Good:	The teacher is able to perform this skill in an effective manner.
2. Fair:	The teacher is unable to perform this skill in an acceptable manner but has some ability to perform it.	4. Excellent:	The teacher is able to perform this skill in a very effective manner.

Competencies

A 5 Maintain an Occupational Advisory Committee	A 6 Develop Program Goals and Objectives	A 7 Conduct an Occupational Analysis	A 8 Develop a Course of Study	A 9 Develop Long Range Program Plans	A 10 Conduct a Student Follow Up Study	A 11 Evaluate Your Vocational Program
B 5 Select Student Instructional Materials	B 6 Prepare Teacher-Made Instructional Materials					
C 5 Employ Simulation Techniques	C 6 Guide Student Study	C 7 Direct Student Laboratory Experience	C 8 Direct Students in Applying Problem-Solving Techniques	C 9 Employ the Project Method	C 10 Introduce a Lesson	C 11 Summarize a Lesson
C 16 Demonstrate a Manipulative Skill	C 17 Demonstrate a Concept or Principle	C 18 Individualize Instruction	C 19 Employ the Team Teaching Approach	C 20 Use Subject Matter Experts to Present Information	C 21 Prepare Bulletin Boards and Exhibits	C 22 Present Information with Models, Real Objects, and Flannel Boards
C 27 Present Information with Televised and Videotaped Materials	C 28 Employ Programmed Instruction	C 29 Present Information with the Chalkboard and Flip Chart				
D 5 Determine Students Grades	D 6 Evaluate Your Instructional Effectiveness					
E 5 Provide for Student Safety	E 6 Provide for the First Aid Needs of Students	E 7 Assist Students in Developing Safe Practices	E 8 Organize the Vocational Laboratory	E 9 Manage the Vocational Laboratory		
F 5 Assist Students in Applying for Employment or Further Education						
G 5 Prepare News Releases and Articles Concerning Your Vocational Program	G 6 Arrange for Television and Radio Presentations Concerning Your Vocational Program	G 7 Conduct an Open House	G 8 Work with Members of the Community	G 9 Work with State and Local Educators	G 10 Obtain Feedback about Your Vocational Program	
H 5 Supervise Activities of the Student Vocational Organization	H 6 Guide Participation in Student Vocational Organization Contests					
I 5 Obtain a Suitable Teaching Position	I 6 Provide Laboratory Experiences for Prospective Teachers	I 7 Plan the Student Teaching Experience	I 8 Supervise Student Teachers			
J 5 Place Co-Op Students on the Job	J 6 Develop the Training Ability of On the Job Instructors	J 7 Coordinate On the Job Instruction	J 8 Evaluate Co-Op Students' On the Job Performance	J 9 Prepare for Students' Related Instruction	J 10 Supervise an Employer Employee Appreciation Event	

Appendix 2 A Trial of C/PBTE Modules in a College of Education (Technical)

Summary of a report on: A Trial of Performance Based Teacher Education Modules in a College of Education (Technical).

With acknowledgements to:
John Blundell, Roy Brooks and
Harry Thomas of Bolton College of
Education (Technical).

A two year trial was conducted with 25 teachers following a day release part-time course and with 9 teachers on a sandwich course. In both cases the teachers were studying for a Certificate in Education. The experimental use of PBTE was applied to parts of the professional studies component of the course and its associated teaching practice. The basic structure and content of the course remained unaltered; the PBTE modules simply offered an alternative way of learning to mature students.

The main purposes of the trial were to generate information about:

(a) the management of a PBTE approach in a United Kingdom context;
(b) student evaluations of the quality of the PBTE materials and the benefit to them from their use;
(c) tutors' evaluations of the effects on the Cert.Ed. components of 'curriculum' and 'methods of teaching';
(d) affects on the PBTE trials on the examination results related to the Cert.Ed. course;
(e) evaluation of the modules to assess their potential uses outside of the main Certificate in Education Work.

Method of Trial

The trial mainly involved the use of fifteen selected modules relating to the Planning, Implementation and Evaluation of Instruction.* The fifteen modules were selected as addressing the core competencies of "teaching methods" at this stage and level.

Modules used were those developed at The National Center for Research in Vocational Education at Columbus, Ohio. The titles were:

B–2 Develop student performance objectives;
B–3 Develop a unit of instruction;
B–4 Develop a lesson plan;
B–5 Select student instructional materials (with a modified readability method);
C–6 Guide student study;
C–8 Direct students in applying problem solving techniques;
C–9 Employ the project method;
C–10 Introduce a lesson;
C–11 Summarize a lesson;
C–12 Employ oral questioning techniques;
C–16 Demonstrate a manipulative skill;
C–17 Demonstrate a concept or principle;
D–2 Assess student performance: knowledge;
D–4 Assess student performance: skill;
D–6 Evaluate your instructional effectiveness.

Other modules in the series were available for use as supplementary or agreed alternative study. The first five of the modules were taken in a set sequence but at individual rates of progress; the remainder were individually selected. To manage the distribution of the modules a special loan system was set up to enable the students to borrow and return modules as individually required.

Study time for the PBTE modules was allowed during each day of attendance and tutors were available for individual consultations. Some telephone and postal consultation was also employed.

Assessment of performance by the teachers was made mainly through self appraisal and through tutor/student teacher discussion of plans for performance. The teacher performance assessment check lists incorporated in each module were found useful for these purposes. Some tutor assessments of performance in the field setting were possible through teaching practice visits.

Main Conclusions

1. It was found that there was a valid and beneficial use for several of the modular workbooks. The materials need however to be used with care and discretion within a balanced programme.

*In the USA sense of the term.

2. There were few, and relatively minor, problems of interpretation of the modules used in the basic programme.

3. Despite the self-paced nature of the modules there was still a need for group discussions and demonstrations. In the early stages of the trials the individualised learning tended to make the arrangement of useful group work difficult. However the group work undertaken later in the programme was thought to have had an integrating effect and to have helped in review and consolidation. This also helped to overcome a potential criticism of fragmentation through the learning of more or less discrete competencies by separate modules.

4. The examination results of the trial group were no worse and, if anything, better than a comparable (non-trial) group in a previous year and the results of the remainder of the same year group who did not participate in the PBTE trial.

5. Student teacher evaluation of the modules showed a substantial majority reporting "reasonable" or "definite" benefits from use of the modules. About 2% of the total replies on the utility of individual modules reported no real benefit (Numbers of replies = 193, derived from number of students times modules evaluated).

6. Management of the supply and issues of modules is critical to self paced learning. The study yielded information on the numbers needed in relation to the group size and their estimated simultaneous use. For example when a set of five modules is offered the demand factor diminishes as self pacing "strings out" the users.

7. Certain modules from the basic series of 100 were found to contain material of considerable interest to students pursuing optional study e.g. Module A–7 "Conduct an occupational analysis" and A–10 "Conduct a student follow up study" were found helpful to teachers pursuing advanced courses of study. The study also includes a review of the value of each module included in the investigation. It points to the potential power of modules of this type in teacher education but provides some cautionary comments on the need for sensitivity and good management in their use.

Appendix 3 An Appraisal of the Use of NCRVE* Modules in some UK Institutions

This project as a whole was concerned with providing a review of existing information about C/PBTE rather than with empirical research of a substantial nature. However, in view of the relative recency of the NCRVE modules as a resource, it was thought desirable to try to ascertain the extent of their use in England and Wales and to obtain some early impressions of their utility. The brief survey which is described is limited in scope and in depth, but it does provide some indications that the NCRVE modules have been found to be an adaptable, useful resource for FE teacher training and staff development by existing users. It may serve as a pilot study for further investigations. When added to the more detailed study described in Appendix 2 it can possibly justify more extensive trials of the materials or perhaps, more profitably, an effort to develop similar modules more suited to the UK context.

The NCRVE modules in their final published form became available in the USA in 1977 and from 1978 were purchased by a few UK agencies. In 1979 a UK distributor was appointed** and a series of conferences sponsored by the Council for Educational Technology provided an introduction to the general concept of C/PBTE and to the NCRVE modules in particular for interested teacher education institutions.

It was established in June 1981, from the sales records of the UK agency, that 64 institutions of FE and HE had obtained modules, though only a relative few had purchased a wide range or in the multiple copies which would be needed for substantial trials. It was not possible to establish which of these institutions had bought modules simply as a library resource and which had obtained them for use as course materials.

Sixty institutions were contacted, eighteen of these replied that the modules were in use for:

CGLI Course 730/731 (FE Teachers Certificates)	(11)
Certificate in Education support materials	(7)
Staff development activities within colleges	(9)
Library shelf stock only	(3)
For training overseas student/instructors	(2)

Nine institutions provided further information by replying to a more detailed series of questions.

The staff members replying to the enquiry reported as follows:

(i) They first learned of the modules from a variety of sources; mainly from publishers advertisements and from journal articles e.g. EDUCA.

(ii) The main sources of background information were journal articles and explanatory booklets available in association with the modules.

(iii) Only two of the users had seen and appraised PBTE materials other than the NCRVE modules.

(iv) The modules mainly in use by all respondents were in the following categories:
B – Instructional Planning.
C – Instructional Execution.
D – Instructional Evaluation.

(v) Four of the respondents had used modules in other categories such as:
A – Program Planning.
G – School – Community Relations.
I – Professional Role and Development.

(vi) No attempt was made to elicit detailed evaluation of each module used owing to the large number of modules (100) involved. However a question as to which had been relevant and helpful in use yielded a great variety of responses. Whilst more respondents thought that modules in categories B, C and D had been either 'very' or 'mainly' relevant and helpful, there was no clear pattern. Other studies (see Appendix 2) have shown that the individual NCRVE modules do vary considerably in their quality, relevance and utility and that no general overall conclusion can be reached. It is necessary for them to be looked at one by one and to accept that evaluation is subjective.

(vii) This small group of users reported employing the modules in a variety of modes. None were using them 'strictly as recommended in the module'. The main impression was of selective, adaptive use, with the modules providing additional study material or

*Modules for C/PBTE developed by the National Center for Research in Vocational Education at The Ohio State University, Columbus, Ohio.
**Stam Press, Cheltenham.

experiences to support other work. The modes of use as reported were:

(a) by students using selected learning experiences; (5)
(b) by students using a set part of a sequence in a module; (2)
(c) as supplementary reading for coursework assignments; (4)
(d) by tutors to extract ideas and materials for use in lectures and tutorials; (6)
(e) by use of the checklist of performance elements. (2)

(viii) In making general comments on the format and design of the modules the features which were noted as being helpful were:

(a) the use of terminal and enabling objectives;
(b) the systematic format and the concise presentation;
(c) the introductory notes on how to use the module;
(d) the easy level of the language used;
(e) the information sheets covering the main content;
(f) the performance checklists at the end of the modules.

Other features, which were generally regarded as unhelpful, were the illustrations of people and activities, the recommended further reading and, as might be expected, the application of examples to vocational education in the USA.

(ix) When asked for views on the place of a competency/performance based approach for further education teachers the tendency was to support this approach but with some reservations.

Of the nine module users all indicated that they would like to know more about C/PBTE. The propositions that C/PBTE should be more widely publicised and that further development work should be undertaken in the UK context were supported by all but one, who was 'not sure'.

Whilst over half of the respondents (5) supported the development of modular materials to help the introduction of new curriculum or for new examination body proposals the others were 'not sure' about this. At the same time seven of the nine respondents agreed that professionally produced modules are valuable to assist college based, curriculum led staff development.

In the doubts expressed by some about the use of modules related to specific changes or innovations there may be a hint of concern about the control of the process of staff development. This is probably worthy of further investigation.

Although seen to be useful as far as they go the present range of available NCRVE modules does not, according to six out of the nine respondents, adequately cover the competencies needed by the FE teacher. Moreover there is a concern amongst a minority of the group that 'essential theory and understanding could be neglected'.

The NCRVE modules were thought by seven out of nine to be particularly useful in introductory courses such as CGLI 730 (FE Teacher's Certificate).

A number of the respondents provided further comments on the modules.

Appendix 4 Examples of C/PBTE and Modular Based Vocational Teacher Education in Australia

The system of training for technical and further education (TAFE) teachers in Australia shows some similarities to the system in the UK. It is naturally related to a vocational/technical system of education in schools and colleges which is nearer in tradition and content to the UK than to the USA and maintains a strong emphasis on training for named occupations by part-time study.

The teacher training which serves the TAFE system is inevitably diverse since it relies mainly on courses provided by largely autonomous institutions of higher education in which the academic communities have evolved their preferred interpretations of what a teacher training curriculum should be.

The two examples of innovation which follow are chosen for their distinctive differences from mainstream teacher training. They do not constitute typical or representative examples but show what has been done in experiments to provide more effective and justifiable training in a system which is having to face the same criticisms of traditional approaches as the UK and USA. One example covers a fully committed effort to try out C/PBTE based on the modular materials of the NCRVE (Appendix 4a). The other, developed at one college in New South Wales, is what might be termed an evolutionary model, devised to suit the particular needs of a widely dispersed client population (Appendix 4b).

The C/PBTE trials in three Australian states during 1979 were extensive and well documented (Hobart and Harris, 1980). The abstract of the report given as Appendix 4a) indicates the scope of the trial and the general conclusions of the main researchers. The full report constitutes a very frank and thorough study of a widespread trial. It describes some successes as well as some difficulties created by the methodology of the study itself; some related to institutional resistances and some with the particular C/PBTE materials used.

Appendix 4(a)

ABSTRACT of *Mystery or mastery?: An evaluation of performance based teacher education for TAFE teachers in Australia* by Dr. Barry Hobart and Dr. Roger Harris, Adelaide College of the Arts and Education (1980).

This study has involved an evaluation of performance-based teacher education (PBTE) programmes conducted in three Australian states for technical and further education (TAFE) teachers during 1979. Its overall aim was to assess the potential of PBTE for TAFE teacher education in Australia and to determine the most effective strategies for the implementation of this model of teacher education. More specifically, the six objectives of the research related to effectiveness of the PBTE approach, reactions of participants in the programmes, alternative strategies for the implementation of PBTE, institutional considerations in its operation, suitability of the materials used as the delivery system, and reactions of teacher eductors to their role as resource people within the PBTE programmes.

One institution concerned with TAFE teacher education in each of three states – South Australia, Victoria and New South Wales – introduced a PBTE programme into the teaching methodology component of its already existing course. In total, the PBTE programmes involved 145 student teachers, 12 TAFE teacher educators and 28 Victorian field supervisors. The students were undertaking graduate and postgraduate awards. Materials used for the programmes were competency-based modules from the Ohio State University in Columbus, Ohio (NCRVE, 1978).

The programmes were constantly monitored by means of various instruments, including pre- and post-estimate of performance forms, module feedback questionnaires, programme evaluation questionnaires, interviews and evaluation workshops. An Advisory Committee provided technical advice on the research.

The data from the three participant groups indicated that the majority of those who took part in the 1979 programmes considered that PBTE as a model of teacher education was effective as a means of developing instructional skills. While the PBTE

programmes met with opposition from a minority of student teachers, criticism derived mainly from factors concerned with implementation of the system rather than with the system itself. A number of factors identified as constraints upon the implementation of PBTE were associated with attendance requirements, timetabling, resources, supervisory systems, assessment procedures and reactions of other teacher educators. The materials were considered to be appropriate and of high quality, although substantial proportions of participants claimed that they required modification to be more suitable in the Australia TAFE context. The data pinpointed certain aspects in need of such revision.

From the results of the study, the authors have concluded that the PBTE model has considerable potential for TAFE teacher education in Australia, but that its effectiveness depends upon certain conditions being met with respect to its three components – teacher educators, student teachers and supporting resources – and to its implementation. The study has indicated that PBTE is demanding of the institution that adopts it and that institutional change is required if such a model of teacher education is to be implemented effectively.

Three sets of recommendations have been made in the report. These recommendations relate to the overall PBTE model, to the components of the system and to the specific strategies for implementation of PBTE programmes.

Discussions with some of the participants in the study by the author of this FEU report in August, 1981* provided footnotes to the original study which may be revealing. One test of the success of a pilot scheme is whether it has encouraged the participants to repeat and extend the experiment. Failure of the innovation to 'take' and become institutionalised may not be related to its intrinsic merits but it has to be noted that in the Australian context only one of the three trial institutions is persisting with C/PBTE in a fully operational form. And this institution is the one in which the principal researchers manage the programme. The C/PBTE project appears to have made some impact in the other institutions but what remains is residual, adaptive use of the modular materials rather than systematic use of the C/PBTE approach.

The second Australian example given in Appendix 4b relates to a home produced modular delivery system. It owes something to C/PBTE but is not committed to it as a system. The most interesting feature is perhaps the participative relationship between the central institution and its client colleges and teachers. In this respect it is quite like the C/PBTE system, at Temple State University, Philadelphia (described in Chapter 4) and others in the USA. It also seeks to encourage more relevant learning experiences of a real kind, bringing the individual's employing institution in as a partner in the process.

*(at the National Conference of TAFE Teachers Educators at Melbourne, August 1981).

Appendix 4(b)

An example of the use of modular materials for the preparation of technical and further education teachers in the external mode – Newcastle College of Advanced Education, New South Wales, Australia.

With acknowledgements to:

Dr. E. Richardson (Principal)

Dr. J. Lergessner (Materials Developer).

A series of modules was developed in 1980–81 to fit a proposed system of technical and further education (TAFE) teacher preparation in the non-metropolitan northern parts of New South Wales. The new teachers to be trained would be employed by the State Department and located in widely distributed TAFE institutions. The system would also cater for selected non-teaching TAFE personnel such as counsellors and librarians; also for training officers from industry.

The system essentially consists of a central providing institution with a substantial teacher training department, regional teacher education advisers and locally based special method tutors who provide support and supervision for new teachers, with respect to the content and method of their special subject areas. There

is intended to be a combination of distance learning, with local support and group work at regional centres on a weekly basis. The central institution staff travel weekly or fortnightly to the regional centres to provide additional face to face contact and to exercise supervision in general.

The modular materials provided a basic curriculum which is quite explicit in its content and purposes. Although some text book resources are specified as necessary reading, the modules are otherwise self contained and include set reading, assignments, check lists and self assessment instruments. Some use is also made of the National Center Modules from Ohio, USA for the development of specific competencies.

The modules were developed over a period of one year with the aid of a federal grant. Further work is in progress to develop support materials such as video tapes and films. The total course is intended to last over two years and to lead to the award of an approved Diploma in Teaching and Diploma in Education after further study.

Although this particular example of a modular system does not claim to be essentially competency or performance based, it would seem to owe a good deal to the earlier work done in the United States.

The version available for review was a draft or trial version and subsequent refinements have been made. It is understood from the developers of the materials that whilst the modules have been well received, their implementation as originally intended in the distance learning mode has been delayed due to some resistance from the professional organisations. However refined the materials and however rationally justifiable in terms of economy in delivery, the re-organisation of teacher training roles, duties and responsibilities does impinge on conditions of service issues. Curriculum materials are evidently a necessary element in the external mode but are not in themselves a guarantee of acceptance of the delivery system.

The titles of the modules and their sub units are given in Annex (a) to this appendix.

Modules 1 to 9 cover the two years of study leading to the Diploma in Teaching. Module 10 provides a range of electives for personal and professional development.

(Review based on draft modules and interviews with Dr. J. Lergessner in Melbourne, Victoria, in August 1981 by E.N. Tuxworth.)

Annex (a)

MODULE AND INDIVIDUAL UNIT TITLES

MODULE 1: PERSONAL AND PROFESSIONAL DEVELOPMENT FOR TAFE* TEACHERS.

- Unit 1 Skills to assist Study by the External Mode.
- Unit 2 Communication Skills.

MODULE 2: PLANNING FOR TAFE TEACHING.

- Unit 1 Student Learning Objectives.
- Unit 2 Planning a Lesson.
- Unit 3 Lesson Presentation.
- Unit 4 Developing a Curriculum.

MODULE 3: TAFE TEACHING SKILLS.

- Unit 1 An Introduction to Teaching.
- Unit 2 Teaching to Assimilate Learning.
- Unit 3 Explaining.
- Unit 4 Guidelines for College Observations.

MODULE 4: TEACHING STRATEGIES FOR TAFE.

- Unit 1 An Introduction to Teaching Strategies.
- Unit 2 Alternative Teaching Strategies.

MODULE 5: TAFE INSTRUCTIONAL MATERIALS AND TECHNOLOGY.

- Unit 1 Instructional Media.
- Unit 2 Preparing Instructional Notes and Class Materials.
- Unit 3 Developing Programmed Learning Materials.
- Unit 4 Media Package Construction.

MODULE 6: TAFE CLASS MANAGEMENT.

- Unit 1 The TAFE Environment.
- Unit 2 The Process of Learning.
- Unit 3 Personal Factors in Teaching.
- Unit 4 Class Management and Organisation.

MODULE 7: ASSESSMENT FOR TAFE TEACHING.

- Unit 1 An Examination of Current Measures of Assessment.
- Unit 2 Developing and Using Assessment Measures.

MODULE 8: PREPARING A MODULE FOR TAFE TEACHING.

(equivalent to *2 UNITS*)

MODULE 9: ISSUES IN TAFE.

- Unit 1 Local Issues in TAFE.
- Unit 2 National Issues in TAFE.
- Unit 3 Comparative TAFE Issues.
- Unit 4 Social Issues related to TAFE.

MODULE 10: These Units are offered by other Departments of NCAE** on a yearly basis, according to demand.

Course Advisory Booklet: "A Guide to Studying by the External Mode".

*Technical and Further Education.
**Newcastle College of Advanced Education, New South Wales.

Appendix 5 Modules for Improving the Competencies of Vocational Education Curriculum Specialists (VECS)* (American Institute for Research – AIR)

The modules are meant for vocational educators at the local, district and state levels who have responsibilities related to curriculum development and management. Local design or adaptation of vocational curricula is necessary in the USA in the absence of a system of central validating and examination agencies, such as exist in the UK. It is claimed that the modules are also useful in teacher training institutions in traditional or non-traditional arrangements.

These modules were developed, starting in 1974 and using federal funding from the US Office of Education. With the help of practitioners at the federal, state and local levels necessary competencies were derived and refined. Training modules were then written, pilot tested and disseminated. In 1978 a further federal grant was received to enable AIR to combine and update the first issue. The second versions now being distributed are more concise and are presented in a form which provides for maximum flexibility in their use.

The introductory literature and "instructors' guide" encourage adaptive use of the VECS modules. The whole set can provide the foundation of a formal curriculum specialist training programme. Selected modules can serve as the focus of specific courses. Another option is to integrate components of modules, individual modules or series of modules into existing courses. The modules may be completed in full and in sequence, while other users may adapt parts of a module to enrich a course.

Potential users in other countries would need to note that the materials are designed to suit the legal, organisation and administrative system of the USA. Modules 2–6 contain such 'system specific' information. The other modules provide a pattern of study which is potentially useful in the UK, with suitable interpretation and adaptation.

An extract from the Users Guide to the VECS Modules is given to show the titles and synopsis of content.

*Developed by the American Institute for Research (AIR) in Behavioural Sciences at Palo Alto, California, and distributed in the USA by the Eastern Central Network Curriculum Center, Sangamon State University, E22 Springfield, Illinois 62708.

Overview of Module Content and Format

Each of the VECS modules provides a concise presentation of basic information that can either stand alone or serve as a foundation to which activities and readings can be added. In addition, the modules can be adapted to a variety of use patterns. For example, all 16 can be taught in sequence as a program of study, a series of sub-group of modules on one subject area can be used in a course, or students may learn from single modules as their needs dictate. The modules are numbered and printed with color-coded covers to suggest patterns of use.

The *Introductory Module* (orange cover) provides an introduction to all the other VECS modules.

- *Module 1: Vocational Educators and Curriculum Management* describes the role of the vocational education curriculum specialist and provides and overview of the six major curriculum development and management functions.

The five modules in the *Foundation Series* (blue covers) provide an introduction to the history and philosophy of vocational education in the United States and describe current areas of emphasis.

- *Module 2: The Scope of Vocational Education* describes the evolution of vocational education; briefly considers the philosophical, economic, and sociological concepts underlying the current structure of vocational education; and presents student enrolment data.

- *Module 3: Organization of Vocational Education* describes the organization and administration of vocational education at the Federal, State, and local levels. This module also describes the types of vocational education programs sponsored by secondary and post-secondary schools, area vocational centers, and other agencies. Finally, the module describes the role of the advisory council in vocational education.

- *Module 4: Legislative Mandates for Vocational Education* describes key factors that affected vocational legislation between 1917 and 1980.

- *Module 5: Priorities in Vocaticnal Education* provides an overview of such recent priorities as energy conservation, sex equity, youth employment, and programs for special students. Types of programs providing job experiences to supplement classroom instructions are also discussed here.

- *Module 6: Vocational Education for Students with Special Needs* discusses recent Federal legislation regarding vocational education for students who are handicapped or disadvantaged, who speak limited English, or who are preparing for occupations that are not traditionally held by persons of their sex. The module discusses barriers to equal education faced by special students, and includes guidelines for reviewing and modifying curricula, facilities and materials.

The five modules in the *Curriculum Development Series* (yellow covers) concentrate on tasks directly related to the preparation of instructional materials.

- *Module 7: Vocational Needs Assessment and Curriculum Development* introduces the reader to discrepancy analysis. The module describes methods for evaluating student and labor market needs and shows how information gathered from the needs assessment process can be used to propose a new or improved curriculum.

- *Module 8: Conducting Task Analyses and Developing Instructional Objectives* is devoted to the derivation and specification of instructional objectives. Derivation includes the location or development of a general job description, analysis of the tasks included in the description, selection of tasks for instruction, description of the target population, and determination of course prerequisites.

  Specification refers to the detailed description of behaviors expected of students upon completion of instruction and of important conditions under which student behavior is to occur.

- *Module 9: Selecting Instructional Strategies and Assessing Student Achievement* describes the advantages and disadvantages of eight instructional strategies and discusses the role of criterion-referenced testing. The objectivity, validity, reliability, efficiency, and non-reactivity of tests are also discussed in this module.

- *Module 10: Relating Learning Differences and Instructional Methods* describes variables that account for individual differences, discusses methods for use in determining student's interests and abilities, and describes strategies for addressing individual differences. Strategies described include selective enrolment, homogenous grouping, informal variations in teaching methods, remedial instruction, team approaches, and self-instructional materials.

- *Module 11: Selecting and Preparing Instructional Materials* familiarizes the reader with the resources available to vocational educators and suggests criteria for evaluating instructional materials. The module also discusses the thinking, writing, and editing processes involved in developing effective written materials.

The five modules in the *Administrative Series* (brown covers) focus on the administrative skills associated with vocational education curriculum development and management.

- *Module 12: Evaluating Vocational Education Curricula* provides an overview of evaluation in vocational education, including the pre-implementation and implementation evaluation of curricula. This module presents information on planning the evaluation, developing measures, selecting a design and sample, conducting the evaluation, and processing and analyzing the data.

- *Module 13: Conducting Follow-up Studies and Communicating Evaluation Results* summarizes the major activities included in planning and conducting a follow-up evaluation of former vocational students or their employers. The module also includes guidelines for interpreting and communicating the results of all types of vocational education evaluations.

- *Module 14: Managing Vocational Education Programs* describes a variety of management techniques including Management by Objectives, PERT, PPBS, the Delphi technique, the advocate team

process, and Zero-Based Budgeting. The module also reviews the concept of educational accountability and discusses techniques for selecting instructors; providing equipment, facilities and supplies; scheduling; and preparing a budget.

- *Module 15: Preparing for Curriculum Change* defines terms commonly used in the study of change, discusses the characteristics of people most likely to accept change, and describes the types of innovating programs that are most easily accepted. The module also focuses on the general functions of the change agent and on the various stages of the change process.

- *Module 16: Staff Development* focuses on the planning, implementation, and evaluation of staff development activities for vocational educators. This module describes methods for determining staff development needs, creating staff development strategies, conducting activities, and evaluating results.

Each of the VECS modules follows the same format. They all begin with an introduction that contains a brief overview of module content, instructions to the learner on how to use the self-check materials in the module, a listing of the goals and objectives addressed in the module, and a bibliographic reference for any outside resources needed to complete the learning activities in the module. The text, which is divided into sections representing each major goal of the module, follows. The text synthesizes a significant amount of materials and information into a concise content outline. Individual and group learning activities and discussion questions related to each goal are suggested. The modules conclude with a summary and a series of appendices. The appendices include self-check questions and responses for each goal. In some modules, responses to individual study activities and discussion questions are also included. The last section in the appendices is always a list of recommended references for use by students and instructors who would like to pursue specific module topics in greater detail.

Appendix 6 Modules Under Development for Special Needs in Vocational Education

New PBTE Modules

Category K – Implementing Competency-based Education (CBE) – to be available from the publisher (AAVIM) in early 1983.

K–1, Prepare Yourself for CBE
K–2, Organize the Content for a CBE Program
K–3, Organize Your Class and Lab to Install CBE
K–4, Provide Instructional Materials for CBE
K–5, Manage the Daily Routines of Your CBE Program
K–6, Guide Your Students Through the CBE Program

Category L – Serving Students with Special/Exceptional Needs – to be available for AAVIM in late Summer 1982.

L–1, Prepare Yourself to Serve Exceptional Students
L–2, Identify and Diagnose Exceptional Students
L–3, Plan Instruction for Exceptional Students
L–4, Provide Appropriate Instructional Materials for Exceptional Students
L–5, Modify the Learning Environment for Exceptional Students
L–6, Promote Peer Acceptance for Exceptional Students
L–7, Use Instructional Techniques to Meet the Needs of Exceptional Students
L–8, Improve Your Communication Skills
L–9, Assess the Progress of Exceptional Students
L–10, Counsel Exceptional Students with Personal-Social Problems
L–11, Assist Exceptional Students in Developing Career Planning Skills
L–12, Prepare Exceptional Students for Employability
L–13, Promote Your Vocational Program with Exceptional Students

Category M – Assisting Students in Improving Their Basic Skills – to be available from AAVIM in late Fall 1982.

M–1, Assist Students in Achieving Basic Reading Skills
M–2, Assist Students in Developing Technical Reading Skills
M–3, Assist Students in Improving Their Writing Skills
M–4, Assist Students in Improving Their Oral Communication Skills
M–5, Assist Students in Improving Their Math Skills
M–6, Assist Students in Improving Their Survival Skills

Category E – Instructional Management – to be available from AAVIM in late Fall 1982.

E–10, Combat Problems of Student Chemical Use

Appendix 7 Extract from a C/PBTE Module

Extract from Module C.5 in the Professional Teacher Education Module Series

The extracts are provided with the kind permission of the National Center for Research in Vocational Education – The Ohio State University, Columbus, Ohio.

Module C.5 – Employ Simulation Techniques.

The module is part of the "Instructional Execution" Category, which deals with instructional, teaching and learning techniques.

Three extracts are offered to give an impression of how the NCRVE modules are presented and how the teacher can use the range of optional and required activities to develop competence in this particular technique.

(i) About this module – a review of the objectives, activities and performance requirements.
(ii) Overview of Learning Experience No. 1.
(iii) Teacher Performance Assessment Form.

Other modules in the series have similar formats but with variation to suit the objectives.

NOTE

The extracts are from the 1st Edition of the PBTE modules. A new 2nd Edition will be available in late 1982. This provides more and better illustrations, other improvements and 27 additional titles as indicated in Appendix 6.

PBTE Modules are distributed in the UK by Stam Press, Cheltenham.

MODULE

C-5

Employ Simulation Techniques

MODULE C-5 OF CATEGORY C—INSTRUCTIONAL EXECUTION
PROFESSIONAL TEACHER EDUCATION MODULE SERIES

The Center for Vocational Education
The Ohio State University

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1977

ISBN 0-914452-61-4

Published and distributed by the **American Association for Vocational Instructional Materials (AAVIM),** 120 Engineering Center, University of Georgia, Athens, Georgia 30602, (404) 542-2586.

ABOUT THIS MODULE

Objectives

Terminal Objective: In an actual school situation, employ simulation techniques. Your performance will be assessed by your resource person, using the Teacher Performance Assessment Form, pp. 59–60. (*Learning Experience III*).

Enabling Objectives:

1. After completing the required reading, demonstrate knowledge of the various types of simulation techniques and the characteristics of each (*Learning Experience I*).
2. For simulated situations, use or critique the use of simulation techniques (*Learning Experience II*).
3. For simulated classroom situations, use or critique/describe the use of role-playing techniques (*Learning Experience III*).

Prerequisites

To complete this module, you must have competency in developing a lesson plan. If you do not already have this competency, meet with your resource person to determine what method you will use to gain this skill. One option is to complete the information and practice activities in the following module:

- *Develop a Lesson Plan*, Module B–4

Resources

A list of the outside resources which supplement those contained within the module follows. Check with your resource person (1) to determine the availability and the location of these resources, (2) to locate additional references in your occupational specialty, and (3) to get assistance in setting up activities with peers or observations of skilled teachers, if necessary. Your resource person may also be contacted if you have any difficulty with directions, or in assessing your progress at any time.

Learning Experience I

Optional

Reference: Hanson, Garth A. and Charles E. Parker, "Simulated Work Experiences for Prospective Business Teachers." *National Business Education Quarterly*. 38 (December 1969): 25–33.

Reference: McClelland, William A. "Simulation—Can It Benefit Vocational Education?" *American Vocational Journal*. 45 (September 1970): 23–25.

Reference: Persons, Edgar. "It's an Old Game in Vocational Agriculture." *American Vocational Journal*. 45 (September 1970): 34–36.

Reference: Resnick, Harold S. "Simulating the Corporate Structure: A Learning Game for Industrial Education." *American Vocational Journal*. 45 (September 1970): 37–39.

Reference: Illinois Teacher. 15 (September–October 1971).

Locally-produced videotapes of teachers using simulation techniques which you can view for the purpose of critiquing the performance of those teachers.

Videotape equipment for viewing videotaped presentations involving the use of simulation techniques.

Learning Experience II

Required

Simulation materials, either commercially prepared or developed by you, to use in conducting a simulation experience.

1–5 peers to role-play students with whom you are conducting a simulation experience, and to critique your performance in conducting this activity. If peers are unavailable, an alternate activity has been provided.

Learning Experience III

Required

Role-playing materials, either commercially prepared or developed by you, to use in conducting a role-playing experience.

2–5 peers to role-play students with whom you are conducting a role-playing experience, and to critique your performance in conducting this activity. If peers are unavailable, an alternate activity has been provided.

Optional

Reference: Clark, Leonard H. and Irving S. Starr. *Secondary School Teaching Methods*. Second Edition. New York, NY: Macmillan Company, 1967.

Reference: Hoover, K. H. *Learning and Teaching in the Secondary School*. Boston, MA: Allyn and Bacon, Inc., 1972.

Reference: Maier, Norman R. F., Allen R. Solem, and Ayesha A. Maier. *The Role-Play Technique: A Handbook for Management and Leadership Practice*. LaJolla, CA: University Associates, Inc., 1975.

Learning Experience IV

Required

An actual school situation in which you can employ simulation techniques.

A resource person to assess your competency in employing simulation techniques.

This module covers performance element numbers 86, 99 from Calvin J. Cotrell *et al.*, *Model Curricula for Vocational and Technical Education: Report No. V* (Columbus, OH: The Center for Vocational Education, The Ohio State University, 1972). The 384 elements in this document form the research base for all The Center's PBTE module development.

For information about the general organization of each module, general procedures for their use, and terminology which is common to all 100 modules, see About Using The Center's PBTE Modules on the inside back cover.

Learning Experience I

OVERVIEW

After completing the required reading, demonstrate knowledge of the various types of simulation techniques and the characteristics of each.

You will be reading the information sheet, Employing Simulation Techniques, pp. 6–10.

You may wish to read the supplementary references, Hanson and Parker, "Simulated Work Experiences for Prospective Business Teachers," *National Business Education Quarterly*, pp. 25–33; McClelland, "Simulation—Can it Benefit Vocational Education?" *American Vocational Journal*, pp. 23–25; Persons, "It's an Old Game in Vocational Agriculture," *American Vocational Journal*, pp. 34–36; Resnick, "Simulating the Corporate Structure: A Learning Game for Industrial Education," *American Vocational Journal*, pp. 37–39; and/or the entire September–October 1971 issue of the *Illinois Teacher*.

You may wish to view locally-produced videotapes of teachers using simulation techniques in the classroom or laboratory, and to critique the performance of those teachers.

You will be demonstrating knowledge of the types of simulation techniques and the characteristics of each by completing the Self-Check, pp. 12–13.

You will be evaluating your competency by comparing your completed Self-Check with the Model Answers, p. 15.

TEACHER PERFORMANCE ASSESSMENT FORM

Employ SimulationTechniques (C–5)

Name _____

Date _____

Resource Person _____

Directions: Indicate the level of the teacher's accomplishment by placing an X in the appropriate box under the LEVEL OF PERFORMANCE heading. If, because of special circumstances, a performance component was not applicable, or impossible to execute, place an X in the N/A box.

LEVEL OF PERFORMANCE

	N/A	None	Poor	Fair	Good	Excellent
In conducting the role-playing activity, the teacher:						
1. explained the student performance objective(s) to be achieved through the role-playing activity	☐	☐	☐	☐	☐	☐
2. provided a role-playing situation suited to the needs, interests, and abilities of the students	☐	☐	☐	☐	☐	☐
3. oriented students to the role-playing situation	☐	☐	☐	☐	☐	☐
4. selected volunteers to be the actors or participants in the role-playing activity	☐	☐	☐	☐	☐	☐
6. directed the role-playing activity toward a positive conclusion, leaving students with a feeling that the situation can be solved	☐	☐	☐	☐	☐	☐
7. terminated the role-playing activity after students had time to portray their position and while interest was still high	☐	☐	☐	☐	☐	☐
8. oriented observers to their function during the role-playing activity	☐	☐	☐	☐	☐	☐
9. involved students in a follow-up discussion at the close of the role-playing activity	☐	☐	☐	☐	☐	☐
10. reinforced the major concepts of the role-playing activity during the follow-up	☐	☐	☐	☐	☐	☐

	N/A	None	Poor	Fair	Good	Excellent
In conducting the other simulation experience(s), the teacher:						
11. explained the student performance objective(s) to be achieved through the simulation experience	☐	☐	☐	☐	☐	☐
12. developed a simulation situation representative of an aspect of real life	☐	☐	☐	☐	☐	☐
13. oriented students to the simulation experience	☐	☐	☐	☐	☐	☐
14. clarified the students' roles or involvement in the simulation activity	☐	☐	☐	☐	☐	☐
15. provided a simulation experience suited to the students' needs, interests, and abilities	☐	☐	☐	☐	☐	☐
16. served as a resource person throughout the simulation experience	☐	☐	☐	☐	☐	☐
17. provided materials for the simulation to aid students in meeting the objectives	☐	☐	☐	☐	☐	☐
18. involved students in a follow-up discussion and evaluation at the close of the simulation experience	☐	☐	☐	☐	☐	☐
19. reinforced the major concepts involved in the simulation experience during the follow-up	☐	☐	☐	☐	☐	☐

LEVEL OF PERFORMANCE: All items must receive N/A, GOOD, or EXCELLENT responses. If any item receives a NONE, POOR, or FAIR response, the teacher and resource person should meet to determine what additional activities the teacher needs to complete in order to reach competency in the weak area(s).

FEU Publications

Competency in teaching is one of a number of FEU publications intended to inform teachers and others and to stimulate professional discussion about matters of concern to the FE service. Other FEU staff development publications include:

How do I learn?: an experimental programme to introduce young people and their teachers to the many ways of learning. December 1981

The starting point for the project from which this report stems was the belief that many young people learn less effectively than they might, and that it should be possible to help them learn more efficiently and with more confidence and enjoyment. The report suggests ways in which subject teachers can develop learning courses for their students.

Tutoring: the guidance and counselling role of the tutor in vocational preparation. June 1982

This self-help resource manual is for teachers rather than professional counsellors. It is aimed at staff developers, as well as to course tutors and subject teachers. The publication is about the way in which tutors might relate to young people; it tries not to separate subject teaching from counselling, since most teachers interact with their student via the subject they teach. The conceptual framework used throughout the manual is based on six major components: Aims, Stages of Development, Tasks, Values, Skills and Settings.

Teaching skills: towards a strategy of staff development and support for vocational preparation. June 1982

This publication is intended to assist those responsible for the further training and development of teachers who are, or about to be, engaged in vocational preparation. The document briefly reminds readers of the basics of vocational preparation and describes evidence that shows that although many teachers are willing to be involved in this work they urgently need support. It analyses the problems and finally suggests a strategy that staff developers might adopt in developing programmes of support.

Copies of these documents (which are free of charge) are obtainable, while stocks last, from the Publications Despatch Centre, Department of Education and Science, Honeypot Lane, Canons Park, Stanmore, Middlesex HA7 1AZ. Tel: 01-952 2366 Ex. 503.

A complete list of FEU publications is also available from the above address.